FLORIDA WILDLIFE

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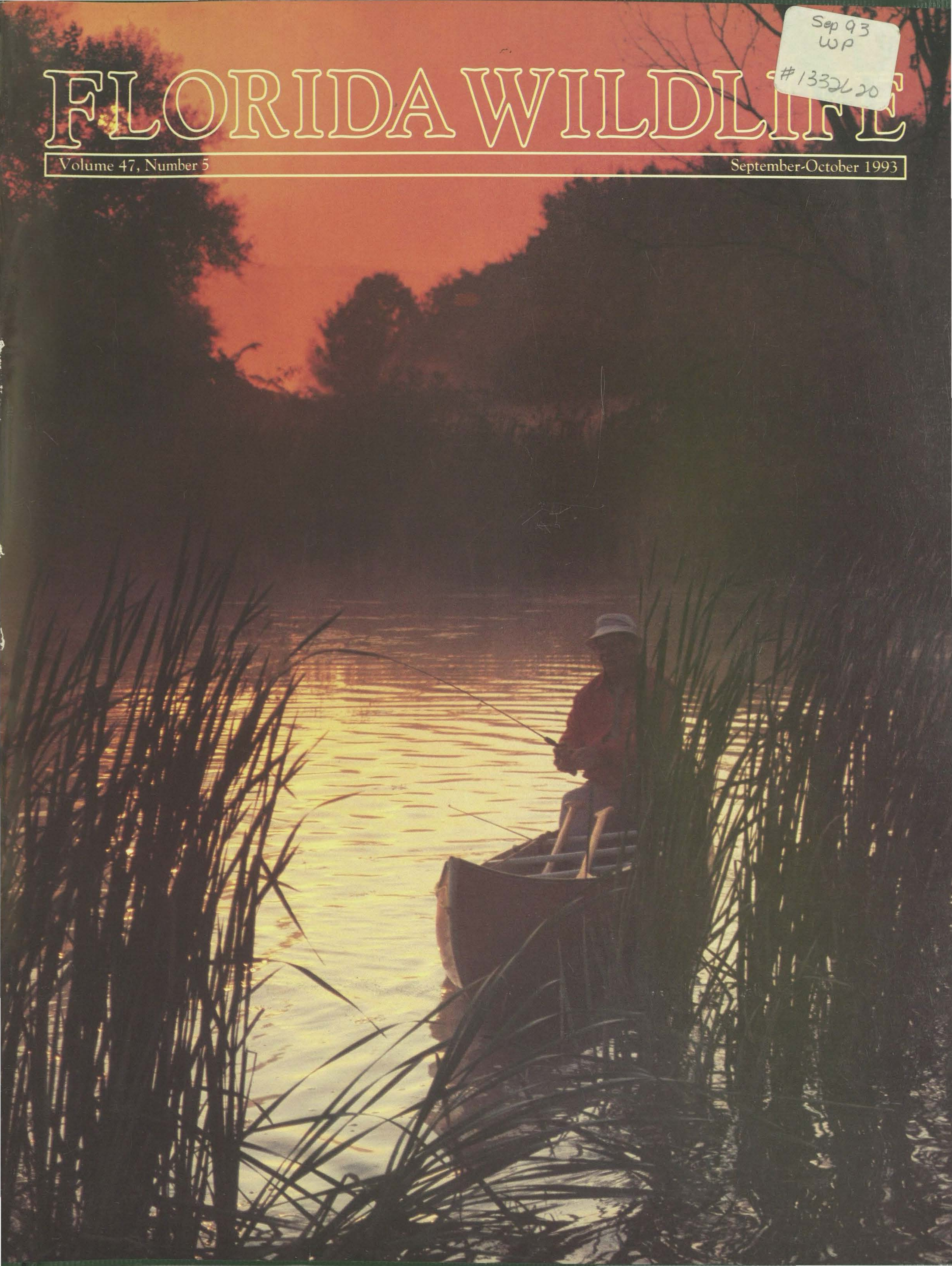
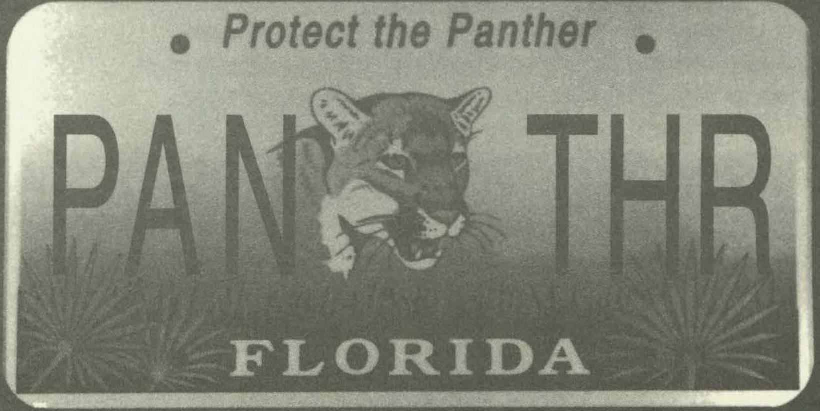


Help Protect Florida's Endangered Panther



Sample only. Actual license tags do not say "PANTHR."

Profit From Tags Supports Education And Habitat Protection

The redesigned Florida panther license plates are now available at your tag office. The new look was created by FLORIDA WILDLIFE art editor, Peggy Perkerson.

The tags cost $27 more than regular license tags, but 45 percent of the added amount goes to the Florida Panther Research and Management Trust Fund administered by the Florida Game and FreshWater Fish Commission. The Save Our State Environmental Education Trust Fund in the Department of Environmental Protection receives 40 percent, which is used for Florida panther habitat education. The remaining 15 percent goes to the Florida Communities Trust Fund in the Department of Community Affairs.

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Wildlife Viewing

In the third installment of our guide to viewing Florida's wildlife, Susan Cerulean takes us to Lake Woodruff National Wildlife Refuge, page 24.

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Covers

A peaceful Florida fishing scene was captured by photographer Soc Clay for our front cover. For the back cover, photographer William J. Weber catches a Florida black bear in a tree.

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The History of Florida's Nongame Wildlife Program

By Mary Tebo

Pioneers settling the United States looked to America's plentiful wildlife for what they could consume or use – meat and skins. As people became more settled and life yielded more leisure, sportsmen continued to hunt and the animals they sought became known as game. Over the years as game became more scarce, hunters paid – through sports-related taxes – to manage and conserve game species.

However, game does not include songbirds, crickets or butterflies. The term does not cover salamanders, bats or shrews. In short, game does not include the majority of native wildlife species.

These species, not fished or hunted, are known as nongame species. Defined by what they are not, nongame species do indeed constitute the major fraction of what lives in wild lands – over 85 percent of Florida vertebrates, not to mention invertebrates. Federally listed endangered species are often nongame, but conservationists point out that ongoing monitoring and management of all nongame species could foretell the drastic declines that befall some species and forestall crises.

The Florida Legislature did not consider an official conservation program for nongame species until the early 1980s. Though the Florida Game and Fresh Water Fish Commission had at times acted to help such nongame animals as the Florida Key deer, the brown pelican and the American alligator, these operations were low-level and sporadic.

"There were two problems," said Dr. Allan Egbert, the assistant executive director of the Commission. "First, there was no dedicated funding source for nongame conservation. Game management was supported by tax revenue from sportsmen, but there wasn't a federal or state revenue specifically dedicated to nongame species. Second, public awareness and support of nongame species was low."

Public attitude began to change as wildlife watching and recreation in Florida's natural areas became increasingly popular. In 1983, biologists Susan Cerulean and Todd Engstrom, sponsored by the Florida Defenders of the Environment (FDE), wrote a report on the importance of nongame management. Their report cited a statewide survey that sampled 4,000 Florida residents and clearly demonstrated public support for nongame conservation. Report in hand, FDE lobbyist John Hankinson urged legislators to address nongame wildlife conservation and complement ongoing programs for game and endangered species.

The Legislature responded by establishing a Nongame Wildlife Trust Fund in the Game and Fresh Water Fish Commission and a nine-member Nongame Wildlife Advisory Council. The advisory council was charged with several important missions – among them, recommending a funding source. Ultimately, it came up with the innovative funding idea of hiking "used car original title fees," the fees new residents must pay to register ownership of their cars in Florida. Thus the source of revenue for the nongame wildlife program was ingeniously tied to one of the major sources of Florida wildlife's decline – new residents, nearly a thousand of them per day during the 1980s. Other residents could make a voluntary donation through a checkoff option when renewing their driver's license.

The Advisory Council also had to propose a budget for the fledgling program, and determine its specific functions. Cerulean remembers the early council meetings as a time of "new ideas and great debates over the philosophy and goals of the Florida nongame program."

Today, ten years later, Florida's nongame program is the new Bureau of Nongame Wildlife and oversees many different projects that promote nongame conservation. For example, Nongame Fish and Wildlife Research Projects have supported 76 studies since 1984 that address some of Florida's most pressing and difficult nongame wildlife conservation questions. Among these were investigations into the decline of the Schaus swallowtail, which gave surprising insights into the extent and consequences of pesticide use in south Florida. Other research projects have resulted in a wildlife study unit for elementary schools and the publication of *Ecosystems of Florida*, the most comprehensive book ever written on Florida ecosystems.

Nongame wildlife program staff have initiated nearly 30 nongame wildlife survey and population monitoring projects. These studies include statewide aerial surveys to locate, map and plan conservation strategies for heron and egret nesting colonies; statewide coastal surveys to determine management for important shorebird nesting areas; and statewide monitoring of brown pelican nesting colonies. Staff also oversee monitoring programs for songbirds and several species of raptors, Florida burrowing owls and some poorly known species of bats and mice.

Florida's Cooperative Urban Wildlife Program, working in cooperation with the University of Florida, guides local governments as they develop county conservation plans. Nongame wildlife biologists also develop and distribute information to local residents on topics such as nuisance wildlife control and landscaping to attract wildlife.

These are just a few of the program's efforts to conserve nongame wildlife. Perhaps one of its most important priorities is to continue to educate the Florida public about the amazing and unusual nongame species that inhabit our unique state. Publications such as *The Skimmer* newsletter, the booklet *Planting a Refuge for Wildlife*, and the poster "Florida's Animated Alphabet" – all free for the asking – are charming enticements to learn more about Florida's nongame wildlife.

Despite the scope of its operations, the Nongame Wildlife Program has faced and overcome some serious threats to its financial health. In 1990, the program found itself facing a 40 percent cutback in services unless it could secure increased funding. Since 1986, the Legislature appropriated Nongame Wildlife Trust Fund money to pay for 40 percent of the expenses of the Commission's Bureau of Wildlife Research. Although this money is used to conduct research on nongame, threatened and endangered species, these projects formerly were paid for from other sources and were not slated to come from the Nongame Wildlife Trust Fund. Also, revenues from used car original title fees plummeted when legislators raised the total fee per car from around $40 to nearly $500, and car-owners magically began to find ways around paying it. Thus the Nongame Wildlife Trust Fund dwindled to very low levels.

Roused by grass-roots support of the nongame program, legislators resolved this financial dilemma by routing new revenue to the trust fund. They raised the money through an increase in speeding fines – justified by the sad fact that large numbers of Florida wildlife die as roadkills. The program received $3 million a year in new funding, and the Commission also gave it responsibility for listed threatened and endangered species in April 1992, a move that the Bureau of Nongame Wildlife's director Brian Millsap said made sense.

"In practice, it's almost impossible to draw a distinction between listed species and all the nongame species they live with. For example, we're out there monitoring shorebirds – why shouldn't we look at the listed species like least terns? More and more, we're evolving toward an ecosystem approach to management, looking at groups of species that are co-occurring.

"There's a use and a purpose behind every species out there," said Millsap, "whether people harvest it, simply enjoy watching it, or even just like the noise it makes at night as they fall asleep. Every species – game, nongame, listed or unlisted – is valuable to us in some way."

Former Commission employee Mary Tebo is a frequent contributor.

FISHING KNOTS

By Bob McNally

The most expensive line and the best tackle mean little if you don't tie knots correctly.

For every angler, and particularly for the serious angler, the ability to tie proper fishing knots is one of the most critical factors to success. When all other things are normal, a fisherman's knots are the weakest part of his equipment. In fact, more prize fish are lost because knots pull out, slip or cut themselves than are lost because of a broken line or faulty tackle.

Knot tying may be somewhat unimportant in bream fishing, but even bream fishermen must utilize at least a rudimentary knot-tying system to effectively put together a line-leader-bobber-hook terminal rig. Moreover, in almost all other types of fishing – such as angling for largemouth bass, striped bass, peacock bass, catfish, crappie or whatever – skillful knot tying makes the difference between simply hooking fish or hooking fish and landing them!

Hundreds of good knots can be used by fishermen. And many fishermen consider mastering several dozen different kinds of knots a true measure of angling skill.

Yet the average angler under average fishing conditions – whether he employs bait, spinning, or fly tackle – needs to know only a handful of knots. Even the most experienced anglers, those who use different tackle under different conditions in different places, frequently utilize only a dozen or so knots, even though they know how to tie most knots of angling value. For example, fully 50 percent of the fishing situations that arise can be taken care of by the fisherman who knows how to tie an Improved Clinch Knot, Blood Knot, Surgeon's Knot, Spider Hitch and Nail Knot. However, there are many dozens of different knots, and under certain circumstances, each knot is very valuable.

Fishermen should know that most knots reduce line strength at least to some extent; how much depends upon the knot you use and how carefully you tie it. For example, when you tie monofilament line to a lure with the Improved Clinch Knot, you reduce the strength of the line by about 5 percent. If you tie the knot carelessly, it reduces the strength of the line even more. Putting only five turns in an Improved Clinch Knot is important because four turns decreases the knot's strength substantially. Six turns gives less strength than five, and seven is worse than six.

The average quality knot, however, when properly tied, should reduce line strength no more than 10 percent, and the best knot will give 100 percent of the stated line strength. The strength of the knots you use, and how well you consistently tie them, makes a significant difference in your fishing success when several knots are used together in forming a fishing rig. Tie one knot incorrectly, or choose the wrong knot in a rig, and the entire system can fail under the pressure of fighting a good fish.

Although most knots will reduce a line's strength somewhat, some knots are so bad they never should be used by fishermen under any circumstances. Also, when bent over on itself at certain angles, monofilament line is self-cutting. Thus, anglers should avoid cutting knots such as the Figure Eight, Half-Hitch and Double Half-Hitch.

When you're learning to tie a knot, practice with heavy cord, heavy monofilament or braided line, light rope or even a discarded fly line, rather than with light fishing line. The heavier material will show more clearly how the knot is shaped and formed, and once you learn to tie a knot with heavy material, it's easy to do with standard fishing lines.

When knots aren't tied properly, the most expensive fishing tackle is useless. Even perfect casting and fish knowledge are of no value if a knot pulls free or cuts itself when a fish strikes. So don't overlook the basics of learning to tie knots skillfully.

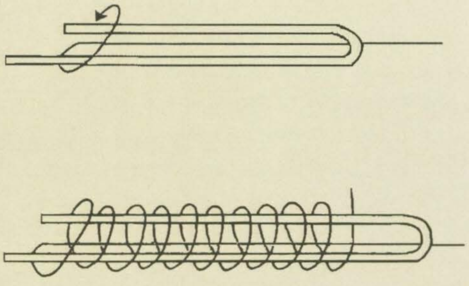
When fishing, you may want to keep a knot and rig reference publication handy so you can quickly check it when some knotty angling problem arises. Tuck one into your tackle box, fishing jacket pocket or boat compartment. Also, you may find it beneficial to review certain chapters or certain knots or rigs from time to time, especially when faced with a new fishing experience – such as fishing for striped bass or deep jigging for crappie for the first time.

Such in-hand knot/rig information will aid you in landing many more fish, especially those trophy fish that otherwise might have been just another tale about the one that got away!

Bob McNally's new book, ***Fishermen's Knots, Rigs and How To Use Them,*** *has just been released. The comprehensive 280-page book has 700 illustrations and covers nearly 200 fishing knots and rigs. It's available for $12.95 (plus $2 postage and handling) from McNally Outdoor Productions, 1267 Fruit Cove Dr., Jacksonville, FL 32259.* ▷

ALBRIGHT SPECIAL KNOT

This knot was made famous by the well-known Florida guide Jimmy Albright. It's an excellent knot for tying light test to heavy test line. It also can be used to connect line to wire cable, nylon-coated wire, and even to small diameter single-strand wire leader.



BLOOD KNOT

This knot is valuable to all fishermen for joining two lines. Its only drawback is that the nylon strands to be connected must be of equal, or nearly equal, diameters – though 10-pound test can be tied to 20-pound using the Blood Knot. The Blood Knot provides a small connection, and when properly tied it cannot pull loose no matter how closely its ends are clipped.

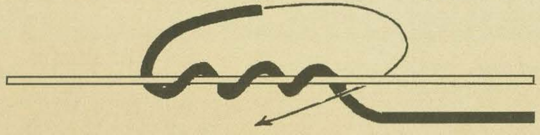


Fig. 1 Cross the two lines, and wrap one line three times around the other. Now place the line end through the loop formed by the two lines.

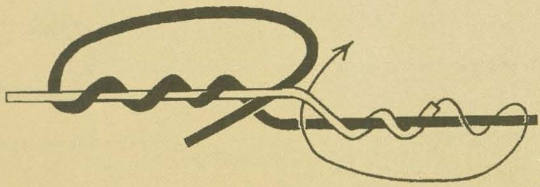


Fig. 2 Turn the other line around the first line three times, put its end through the loop from the opposite side.

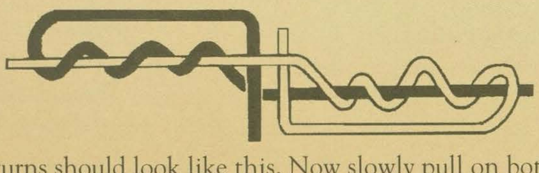


Fig. 3 The turns should look like this. Now slowly pull on both long ends of the lines.

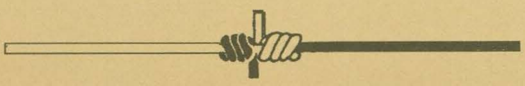


Fig. 4 The tightened knot looks like this, loose ends trimmed.

HOMER RHODE LOOP KNOT

This is an easy knot to tie, and very popular with anglers who use crankbaits. The Homer Rhode Loop allows plugs, spoons and other lures to have the best possible action. The knot forms a loop through the eye of a lure, so it swims more freely than if a knot were tied snugly to it. In fact, a loop formed by this knot often can make a diving plug that otherwise tracks irregularly run true.

The Homer Rhode Loop can be made with either light or heavy line. Forming this knot carefully is important. But when done properly, the knot is extremely strong. Although this knot is normally tied with monofilament, it also can be used effectively with braided line.

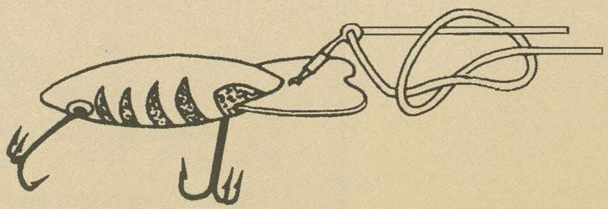


Fig. 1 Tie a simple Overhand Knot about four inches from the end of the line through the hook eye, then back through the center of the Overhand Knot.

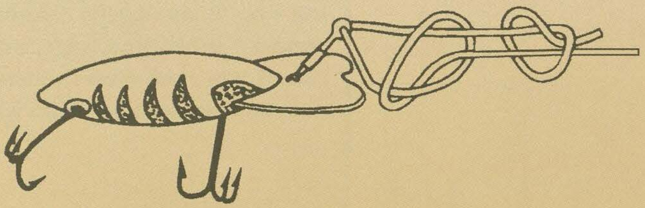


Fig. 2 Next, with the end of the line, make another Overhand Knot around the standing part of the line. When tightened, the two Overhand Knots slide and jam together, meeting at the middle of the two loose Overhand Knots and forming a loop. Where the second Overhand Knot is positioned around the standing line determines the size of the knot's loop. For a big loop knot, form the second Overhand Knot well up the standing part of the line. For a small loop knot, make the second Overhand Knot close to the first Overhand Knot.

IMPROVED CLINCH KNOT

The Improved Clinch Knot is one of the most popular knots for tying a line or leader to either a hook or lure eye. It is one of the most dependable and secure of all knots.

Although many anglers still insist on using the ordinary Clinch Knot, the Improved Clinch Knot is just as easy to tie, and it is much stronger.

The Improved Clinch knot can be difficult to tighten when using heavy test monofilament of, say, more than 40-pounds. But if the tie is moistened well, even stout monofilament will tighten properly.

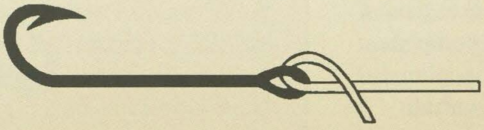


Fig. 1 Pass the line end through the hook eye. Put about six inches of line through the eye so there will be ample line to tie the knot.

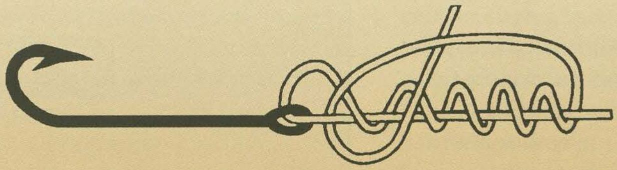


Fig. 2 Hold the hook or lure securely in one hand and wrap the end of the line five times around the standing part of the line, as shown in the illustration. Now pass the line end back through the small loop near the hook eye, and also through the large loop.

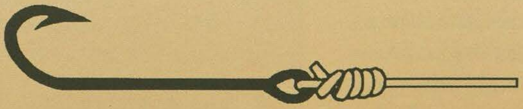


Fig. 3 Tighten and trim the knot carefully.

SNELLING A HOOK KNOT

Generations ago, snelling a hook was necessary because many hooks did not have "eyes." However, some expert anglers still insist today on snelling their "eyed" hooks because they feel snelling makes a strong, permanent connection. Also, a very direct, "hook set" in line with the plane of the hook is made when a fish strikes.

Snelled hooks often are used in fishing natural baits, such as live shiners for outsize largemouth bass in heavy cover. Many bait fishermen prefer snelled hooks because bait can be slipped right over the leader knot. Also, with no knot on the leader above the hook, weeds and other debris are less likely to foul ahead of a bait on the line during fishing. This knot is easily made, and is very similar to the "whip finish" fly tiers use to secure thread when they've completed dressing a fly.

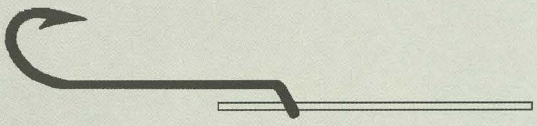


Fig. 1 Thread the leader through the hook eye and lay the leader along the hook shank.

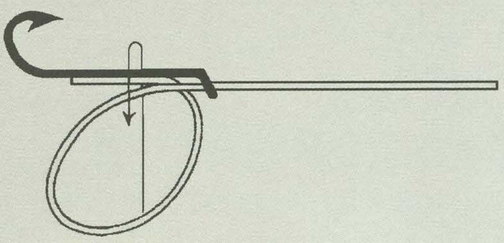


Fig. 2 Pull about six inches of leader through the hook eye and form a loop below the hook shank, as shown.

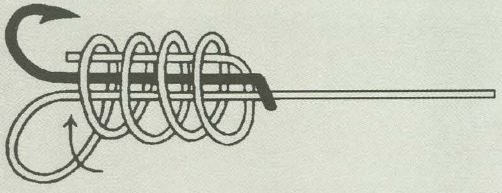


Fig. 3 Hold the line near its end tight and parallel to the hook shank, while wrapping the line loops (as shown) over the entire hook. Be sure the line of the loop closest to the hook eye forms the series of coils.

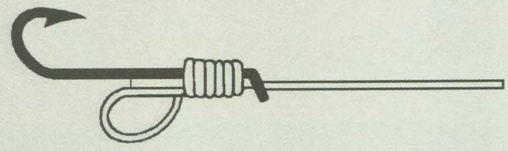


Fig. 4 After six tight coils are formed on the hook shank, slowly pull on the standing part of the line. This will bring the rear loop through the coils and tighten the knot.

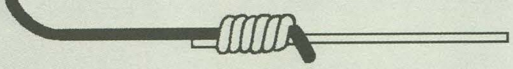


Fig. 5 The completed snell.

▷

PALOMAR KNOT

Many anglers find the Palomar Knot the easiest of all knots to use for tying line to hooks, lures and swivels. This is a strong, simple knot that can be tied just by "feel" – even in complete darkness. Because the line end must be doubled before making the Palomar, it can't be used for fastening heavy line or leaders to hooks or swivels with small rings. It's a good one for using with large plastic worm hooks.

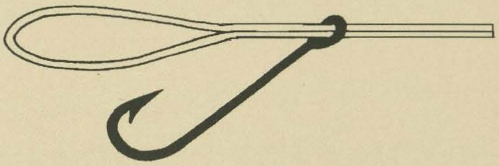


Fig. 1 Double the end of the line and pass the loop through the hook eye.

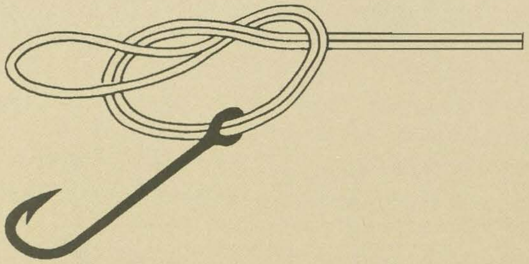


Fig. 2 Double the loop back, then make an Overhand Knot around the standing line, leaving a loop large enough for the hook (or lure) to pass back through.

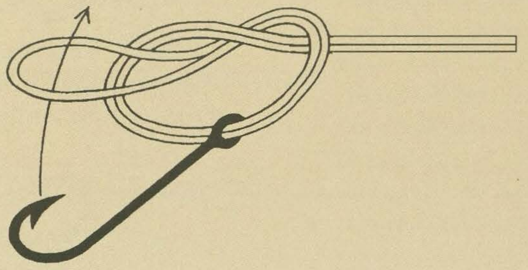


Fig. 3 Put the entire hook (lure) through the loop, as illustrated.

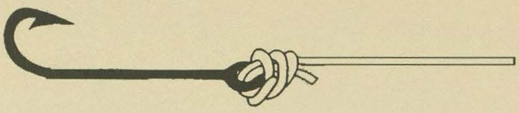
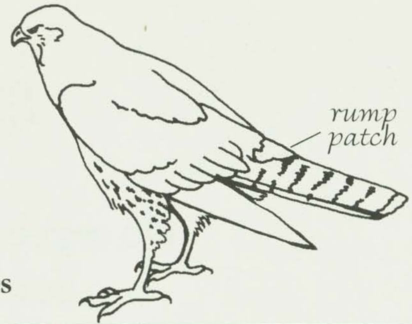


Fig. 4 Pulling on the standing line will draw the knot tight. Trim it, and the knot will be compact and effective.

Delicate Balance

Species: ***Circus cyaneus***
Northern Harrier
Status: Appendix II Species



It's one thing for taxonomists to fiddle around constantly with the Latin names of our animal companions. But it's really quite annoying when we are deprived of the old, familiar names as well. Bird books lost some true poetry when the American Ornithologist's Union bowed to British interests and agreed to replace the descriptive common name of the marsh hawk, so evocative of the bird's essential nature, with the more stilted, much less revealing "northern harrier."

In any case, marsh hawk or northern harrier, it's hard to imagine wintry expanses of Florida marshland without the silent, teetering flight of this graceful bird of prey. These handsome hawks nest on northern breeding grounds in the United States and Canada, retreating to Florida with the first cold fronts of autumn.

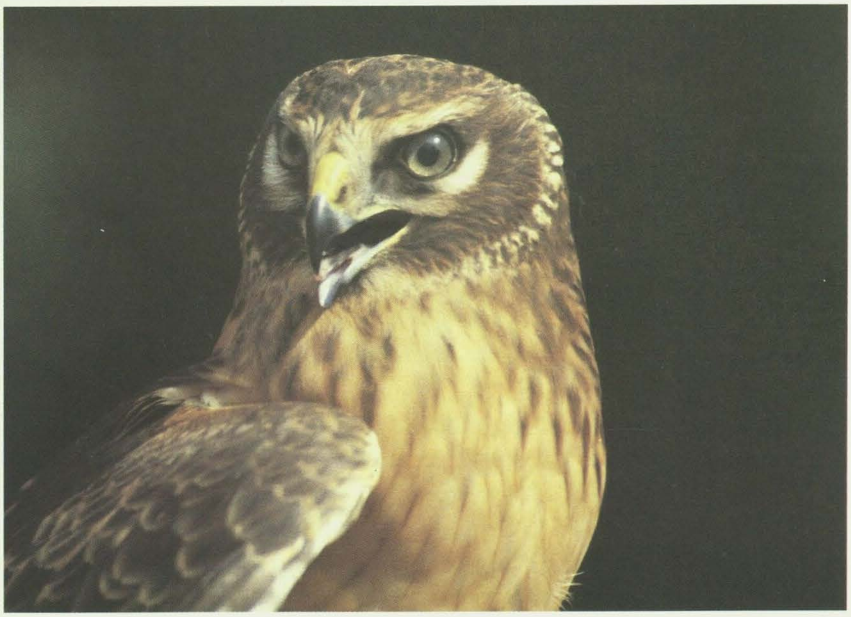
Few birds of prey are as easy to identify as the northern harrier. Harriers have a lazy, tilting flight like the turkey vulture's, but usually will patrol just clear of the tallest marsh vegetation. The hawk's desultory flight really is full of purpose; a sudden drop out of sight indicates the successful capture of a careless rat or marsh bird. Look for the slender form, and long, streamlined wings and tail. A highly visible white rump-patch cinches the identification, whether it accompanies the blue-gray plumage of the male or the dark brown feathering of female or immature birds. Biologist Jim Cox notes that 90 percent of northern harriers observed in north Florida wear the browns of female or young birds. Males are more common further south.

Look for northern harriers in open, treeless country. Likely places to spot the bird are the prairies, rangelands and wetlands of central and south Florida, including the Kissimmee Prairie, Merritt Island National Wildlife Refuge, Lake Woodruff National Wildlife Refuge, Coot Bay and Blue Cypress Water Management Area. In the panhandle, St. Marks National Wildlife Refuge and Hickory Mound Impoundment are just two likely spots to observe this raptor. Good harrier habitat provides cotton rats, frogs, small birds, snakes or crippled ducks. If sufficient prey is available, the birds are likely to be about from September to April.

Earlier in the century, ornithologists described the northern harrier as an abundant winter resident. Today, scientists are less optimistic, believing the birds' low numbers, tied as they are to productive wetlands, are diminishing along with their marshy haunts. Northern harriers are extremely opportunistic hunters that do well in a variety of open habitats, where they take many types of prey, according to raptor researchers Mike Collopy and Keith Bildstein. In other words, these birds are simply not fussy, so any long-term decline in their populations suggests extensive disruption and loss of these habitats.

Northern harriers or old-fashioned marsh hawks, they – and the wetlands they inhabit – deserve our protection.

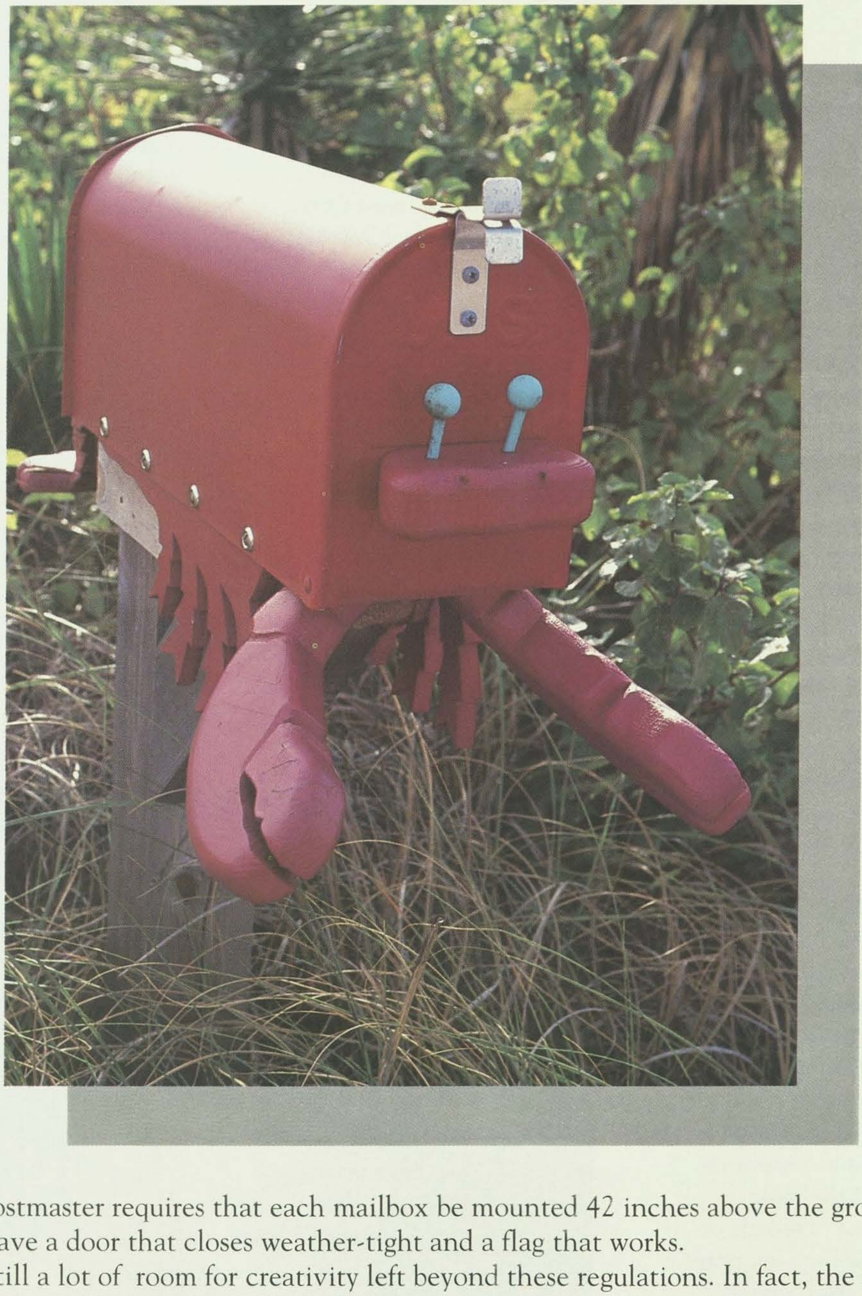
– Susan Cerulean



BRIAN TOLAND

Extra-Special Delivery

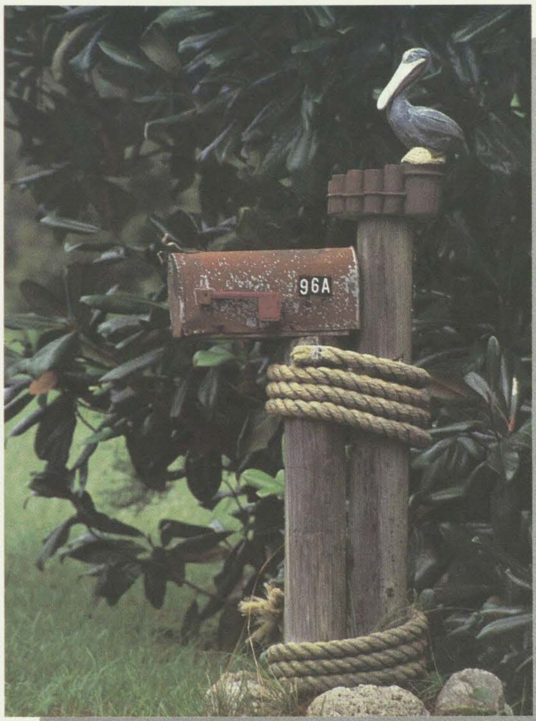
Do regulations really stifle creativity? Maybe... but NOT in the case of mail boxes!



PHOTOGRAPHS BY DAVID AND HAYES NORRIS

The U. S. Postmaster requires that each mailbox be mounted 42 inches above the ground. And each box must have a door that closes weather-tight and a flag that works.

But there's still a lot of room for creativity left beyond these regulations. In fact, the sky's the limit when it comes to designing a mailbox. And many people with an artistic bent take advantage of the opportunity to celebrate the natural world around them, as the accompanying photos by David and Hayes Norris readily show.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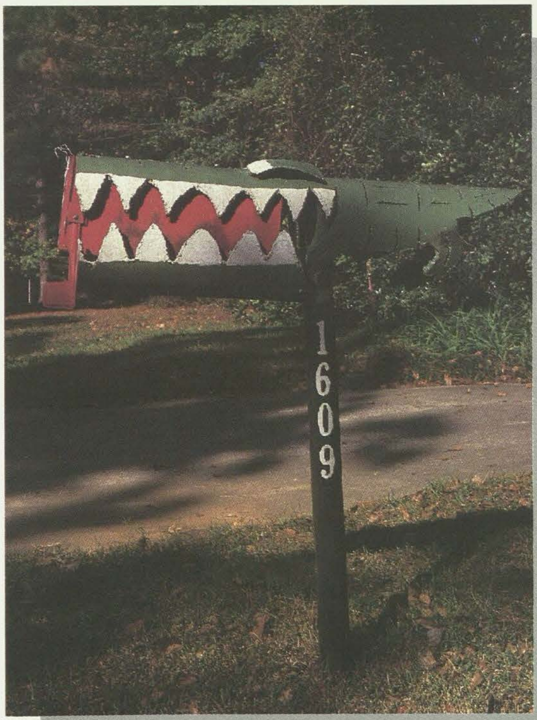
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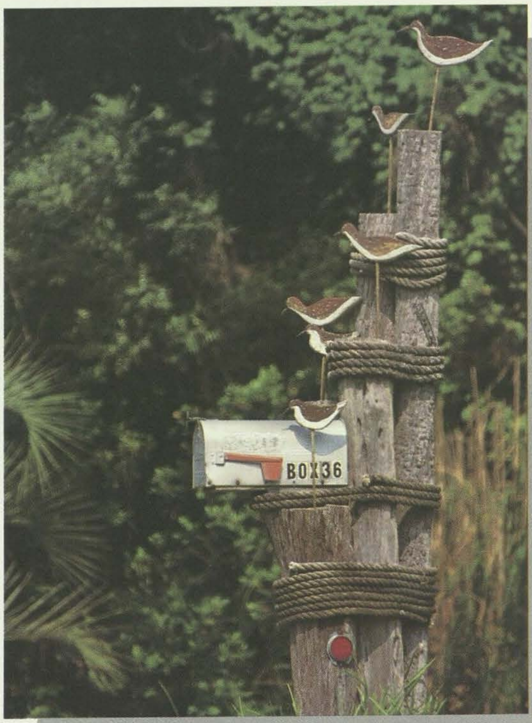
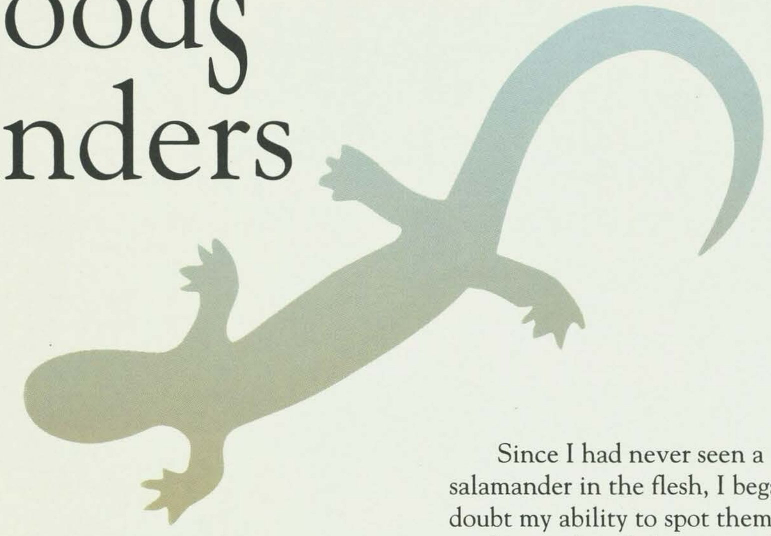

BOX36

HEARN BOX 44

Flatwoods Salamanders

Text and Photographs by
John G. Palis



Half asleep, I fumbled in the dark, eventually grabbing the ringing phone. It was 1 a.m. The voice on the other end of the line whispered, as though regretting waking me, "It's raining." Invigorated by a rush of adrenalin, I dressed quickly as the coffee brewed. An autumn cold front finally had crossed Calhoun County. This was the first rain after dark in several weeks, and the beginning of the flatwoods salamander breeding season.

The flatwoods salamander, *Ambystoma cingulatum*, is a rarely-seen denizen of low, wet pine flatwoods and grass-dominated savannas of the Southeastern Coastal Plain. It ranges from southern South Carolina southward to Marion County, Florida, and west to Mobile Bay, Alabama.

This small-headed, relatively slender salamander attains a body/tail length of five inches. Its chocolate-black body is marked by narrow, gray, irregular lines that form a net-like pattern across its back and tail.

On rainy nights between October and December, mature adults leave their subterranean burrows and migrate to shallow cypress and gum ponds. These rare salamanders have been tracked moving as far as one mile to breed. No one has ever documented the courtship behavior of this secretive species, but freshly laid eggs have been found on the floor of unfilled ephemeral ponds beneath leaf litter, at the mouth of crayfish burrows and on bare mud, often near the base of a tree or grass clump. Depositing her clutch, the female leaves the pond during the next night rain, not to return for another year, perhaps two.

I had hoped to intercept a flatwoods salamander during this movement to and from breeding ponds. Salamanders and frogs often cross roads on rainy nights on their way to or from breeding sites. Large numbers of migrating animals can be encountered under ideal conditions of temperature, humidity and darkness.

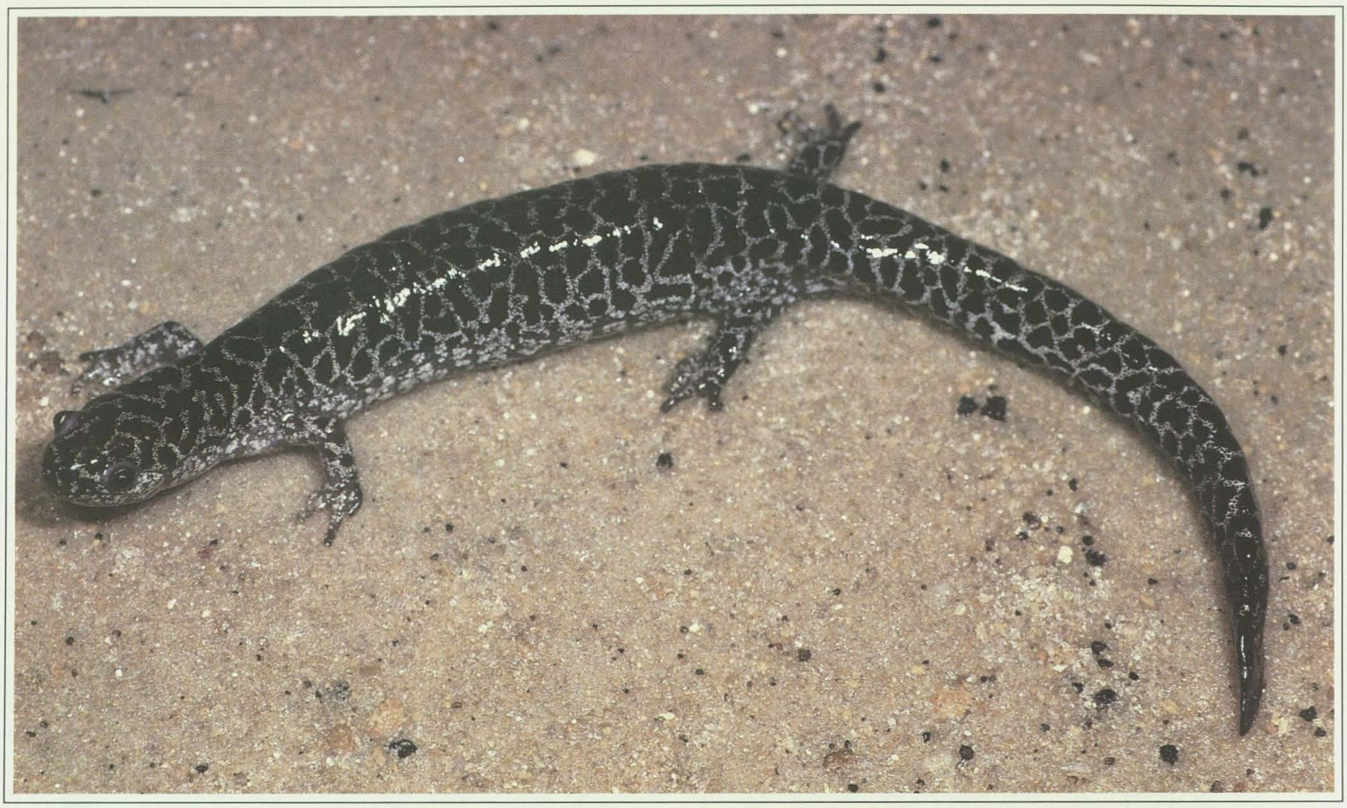
With a thermos full of hot coffee, I drove off in the rain to a secluded three-mile stretch of road west of Tallahassee. Here Dr. Bruce Means, director of the Coastal Plains Institute, had observed dozens of migrating flatwoods salamanders in the early 1970s. I'd wanted to see a flatwoods salamander ever since moving to Florida from Louisiana. Just as birders have their life lists, so do amphibian and reptile enthusiasts. My interest went beyond seeing a beast I had only read about. Scientists believe the species is declining throughout its range and I wanted to determine if the perceived decline was real. As would prove typical for this lonely stretch of road, I found all manner of frogs and invertebrates, but no flatwoods salamanders that rainy night.

Since I had never seen a flatwoods salamander in the flesh, I began to doubt my ability to spot them on the road in my headlights, even though I readily detected smaller species of salamanders such as newts and the diminutive, three-inch-long dwarf salamander. I decided I needed another means of surveying for the secretive salamander.

I had found that I could capture the aquatic larvae of related species of salamanders even when the terrestrial adults were difficult to find. I reasoned that the flatwoods salamander should be no different. I sampled several cypress ponds with dipnets and seines from which Means had collected larvae twenty years before. I struck out again. Was this beast that difficult to find, or was I losing my touch? I then remembered a grassy little pond I came across in the Apalachicola National Forest. The surrounding longleaf pine flatwoods seemed suitable enough; maybe the woods harbored flatwoods salamanders and perhaps they bred in the little pond.

Tom Ostertag, biologist with The Nature Conservancy, and I sampled this pond one clear, sunny day in March, 1990. In less than ten minutes we dipped up seven flatwoods salamander larvae. Flatwoods salamanders at last!

I had never seen such strikingly beautiful larval salamanders. Nearly three inches long, their bodies and tail musculature were boldly striped with black, tan, creamy-white and pale ▷



A gravid flatwoods salamander will deposit her clutch in a pond basin.

yellow stripes. Bushy red gills set off the broad, flattened head from the body, and the tail fin, deep and translucent, was outlined in black.

We found larvae in three ponds that year, and in the year that followed I found larvae in nearly two dozen more ponds on the Apalachicola National Forest and in four ponds outside the Forest. During the winter of 1992, with financial support from the U.S. Forest Service, I recruited the help of naturalist Bob Walker and we found larvae in seven more ponds in the Apalachicola National Forest and one pond in the Osceola National Forest. I also encountered larvae in two more ponds in the western panhandle. Additional sampling during the winter of 1993 revealed a population of flatwoods salamanders on Eglin Air Force Base in the western panhandle, and reconfirmed their existence on St. Marks National Wildlife Refuge near Tallahassee.

Even after three years of trying, I still had not succeeded in finding an adult flatwoods salamander on that remote stretch of road where Means once witnessed mass migrations. I did, at least, finally spot a juvenile on the road, adjacent to what I would later determine to be a breeding pond. I also succeeded in finding migrating adults, readily observed in the lights of my car, on other roads. But what had happened to the mass migrations that Means observed, and why couldn't I get larvae at those historic breeding sites?

It was obvious by now that it wasn't just my bad luck, since I had found larvae in other ponds and adults on other roads. It became apparent that flatwoods salamanders no longer occurred at these historic sites. What had happened in the twenty years between Means' work and my own? It couldn't be acid rain or some other form of widespread pollution, since that would affect all flatwoods salamander populations, not just a subset; it had to be something more localized.

Because the physical characteristics of the breeding ponds vary so widely and because suitable-looking ponds often don't harbor larvae, I decided to look beyond the ponds for the answer. As I examined the terrestrial habitat around each pond, a pattern began to develop. Nearly without exception, ponds that now harbor larvae are within intact or relatively intact pine flatwoods and/or savannas that still support at least some native groundcover grasses and forbs. Historic sites no longer sheltering larvae are within disturbed areas such as long-unburned pine forests, mechanically site-prepared pine plantations or agricultural fields. These areas once supported open pine forest and/or savanna, which harbor diverse groundcover vegetation. The west side of the road where Means once observed dozens of migrating salamanders had been a nearly treeless savanna in the early 1970s. Today it is a densely shaded pine plantation, and the forest's floor is carpeted with a thick layer of pine needles.

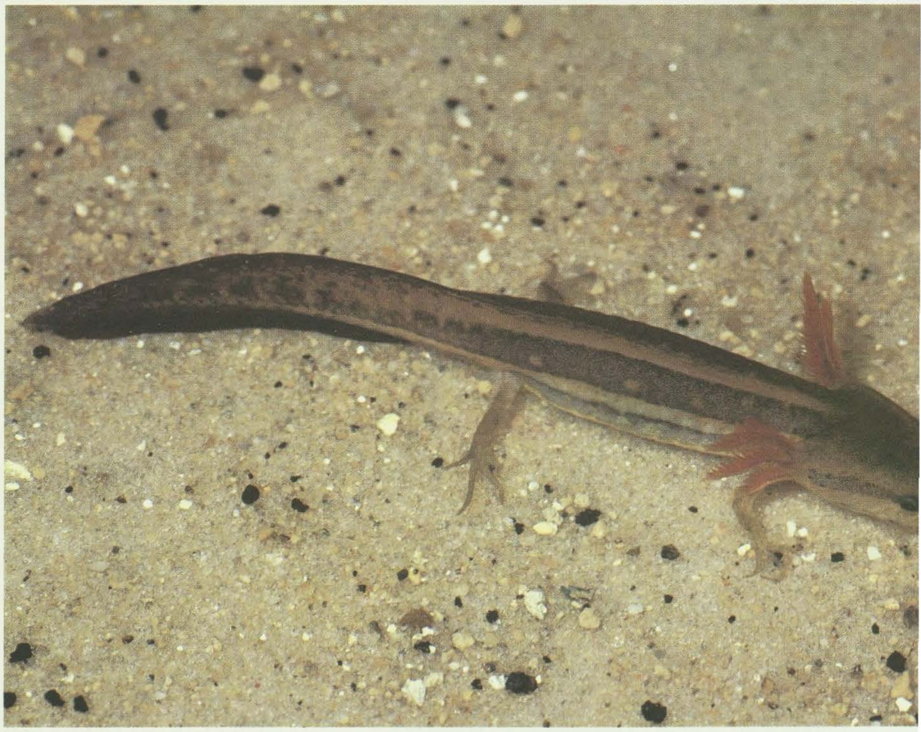
It appears that the perceived decline of the flatwoods salamander is a real phenomenon. It is apparent that as the native grasslands and flatwoods are replaced by monocultures of pine trees and crops, the flatwoods salamander disappears. It's a simple case of habitat loss.

What is the future of the flatwoods salamander in Florida? Almost certainly, the population on the Apalachicola National Forest will remain viable for generations to come, provided that the present trend towards ecosystem management continues. The species' future also looks promising on St. Marks National Wildlife Refuge. The timber industry maintains a presence in the Osceola National Forest, which may endanger the species' continued existence there. The discovery of a population of flatwoods salamanders on Eglin is significant since it is the only known large, extant population on public land west of the Apalachicola River. However, the future of this population remains in doubt. The species has disappeared from private lands throughout its range in Florida and in the southeast. This decline likely will continue as the last remaining pine flatwoods and grasslands are converted for silviculture, agriculture and development.

In just two short decades, the thriving population of flatwoods salamanders observed by Dr. Means has dwindled to nothing. I feel cheated, not having the same opportunity he had to see dozens of these otherwise secretive animals showing themselves on rainy autumn nights in their quest to satisfy their primeval urge to reproduce. But I am thankful to have seen some of them and to have contributed, in some small way, to understanding their ecology and endangerment status. But what of the next generation of herpetology enthusiasts? Will they have the opportunity to find migrating flatwoods salamanders on rainy autumn nights? Or will these isolated populations of flatwoods salamanders on public land disappear with time?

John Palis is a zoologist who worked for the Florida Natural Areas Inventory at the time of this writing. He recently relocated to Indiana where he is completing consulting work for Florida and other states.

A flatwoods depression likely to harbor salamanders.



Flatwoods salamander larvae.

Southwest Florida Black Bear Research

Text and Photographs by David S. Maehr

We were peering at a 250-pound, unrestrained black bear in her winter den on the Florida Panther National Wildlife Refuge in Collier County. She clearly knew we were only five feet away, but seemed reluctant, or unable, to move. The only motion she displayed was a slow rocking of her head.

Biologist Walt McCown, something of a bear himself, stood between the female we call FO2 and me. Although he partially blocked my view, he was a safety barrier. I encouraged him to get a little closer. When the adult female bear was close enough for McCown to touch, she swung her head one last time then ambled, unhurriedly, out of the dense palmetto thicket.

We had hoped to find a newborn January litter, but instead discovered a system of empty nests (shallow depressions in the sand) where FO2 was waiting to give birth. Another search later in March revealed three helpless cubs, and a very lethargic mother that left the den without a fuss.

South Florida black bears become sedentary during winter, just like black bears in most of North America. But none of the bears we have studied exhibit the deep-sleep characteristic of hibernating bears from Tennessee, Minnesota and points north. Do the warmer winter temperatures and abundant food allow Florida bears to remain active longer? Perhaps this and many other questions will be answered as we continue the Commission's new study of the Florida black bear.

Black bears are widely distributed in the state and still can be found in varying abundance in 50 of Florida's 67 counties. The Commission has been conducting research on black bears since the late 1970s, when concern was raised over the impacts of phosphate mining on wildlife in Osceola National Forest. Since then, the Commission's Bureau of Wildlife Research has conducted radio-telemetry studies in Ocala and Apalachicola national forests. Our study in southwest Florida began in 1991. These ongoing studies are important to provide informa-

Florida black bears, like this female yearling, become independent from their mothers when they are about one and a half years old. Females usually produce their first litter when three years old.

tion for managing populations that are hunted in north Florida and those populations that are becoming increasingly threatened by development in the rest of the state. Bear FO2, one of the first captured in our study, will help us better understand how well Florida's bears are coping with an onrush of people and the environmental pressures people create.

We have captured and radio-tagged 55 bears since July 1991. These study animals include 18 females and 37 males ranging in age from less than one year to 15 years old. In addition, we have handled nine newborn cubs weighing less than three pounds each. Adult females average 198 pounds, while adult males average 299 pounds. The largest female and male were 275 and 485 pounds, respectively. Collier County produced the state record black bear, a 630-pound male that was killed by a car just east of Naples in 1990.

FO2 was captured with a spring-activated leg-hold snare, the standard capture tool for bear researchers throughout North America. We place our snares in trails that bears regularly ▷

Bear cubs in south Florida are all born in late February to early March. They stay in the den with their mother until late April.

use, or we use bait to lure them to a culvert trap. Snares are easily transportable and can be used in almost any situation where trees, the snare anchor, are present. We capture some bears with culvert traps, but these are unwieldy and must be used at sites readily accessible by vehicle. Forty-seven bears have been captured with snares and 23 with culverts. Three others have been captured in trees. One was hit by a car then recovered after Commission biologists Phil Manor and Jim Schortemeyer moved it away from U.S. 41.

A captured bear is anesthetized and quickly removed from the snare. Then it is measured, weighed, tattooed and ear-tagged. Blood is collected, and a small tooth is pulled to assist us in estimating its age (cross-sections of the tiny premolars are mounted on slides, allowing us to count growth rings similar to those of trees). These age estimates will be helpful in evaluating the status and stability of the southwest Florida bear population. Finally, we attach a radio-collar, tuned to a unique frequency for each bear. Most of our collars will last about three years. But young bears, which will grow rapidly, are given collars designed to fall off in six months to a year. These transmitters allow us to relocate each study animal on a regular basis to gather data on movement patterns, home range size, habitat use and mortality patterns.

The majority of tracking is done by biologists Darrell Land and Jayde Roof from an airplane 500-1,000 feet above the ground. Typical flights last three to four hours and cover one to two million acres in order to locate about 30 bears in addition to about 20 Florida panthers. The presence of a large sample of radio-collared panthers in the same area makes this project unique to Florida. South Florida is the only region in North America east of the Mississippi River inhabited by both of these large carnivorous mammals. Bears probably scavenge kills made by panthers, but so far telemetry has revealed no evidence of direct interactions between these two species, although remains of a bear have shown up in one panther scat.

Adult females, like FO2, are the easiest bears to find during telemetry flights because they tend to move short distances in small home ranges of about 12 square miles. Adult males are a little more difficult to locate because they have home ranges averaging over 50 square miles. The subadult males (one and one half to three years old) are the most troublesome to track. Because they wear break-away collars, it is difficult to develop more than brief glimpses of their movements. Nonetheless, young males, known as dispersers, have traveled through 600 square miles and have moved up to 50 miles from their capture sites. Young males MO1 and M16 both crossed the Caloosahatchee River while dispersing from Collier County into Highlands and Charlotte counties, respectively.

Although bears have smaller home ranges than panthers, they appear capable of longer dispersal in Florida. While we are just beginning to understand male dispersal patterns, it is the successful establishment of these young males, far away from their mothers and other female relatives, that reduces the inbreeding typical of Florida panthers. Such wide-ranging movements are likely forced by intolerant resident

When bears are captured, biologists take measurements and blood samples to assess their condition.

adult males and the dispersing male's search for safe, unoccupied range.

Typical day-to-day movements appear to be linked solely to procuring food. In this regard, black bears can be described as large, furred, eating machines. The ripening of saw palmetto fruit greatly influences bear movements. Adult bears have been monitored crossing busy highways, traveling up to 15 miles to feed on these sticky, pungent fruits, which are abundant from late August through October. Some black bears eat almost nothing else during this time. The abundance of saw palmetto fruit allows the normally solitary animals to tolerate neighbors at unusually close range.

In late fall, black bears turn to cabbage palm seeds, the succulent stems of fire flag and pickerel weed and Brazilian pepper. A 2-year-old male, M32, gained 65 pounds eating such foods between November 1992 and early February 1993! Black bears are important seed dispersers for many native plants; the process of digestion actually increases germination rates in some species. Unfortunately, the spread of Brazilian pepper, a noxious exotic shrub, is enhanced by black bears as they feed on the tiny red clusters of berries, nearly to the exclusion of native winter foods.

Our examination of nearly 600 scats showed the most commonly eaten foods are seeds of sabal palm, saw palmetto and Brazilian pepper, as well as bees, ants and the stems of pickerel weed. A few foods uniquely available to south Florida bears include bromeliads and the fruits of wild coffee, lantana, royal palm and marlberry. Wild hogs, white-tailed deer and armadillos are eaten infrequently.

Our initial findings already have revealed much about black bear ecology in subtropical Florida. Still, some ▷

Black bears in south Florida use a variety of forest types. They are particularly fond of pine flatwoods when saw palmetto fruits are ripe.

aspects of black bear biology, such as den characteristics and reproductive patterns, are not well understood. Another important goal of our study is to learn more about the impacts of various kinds of bear mortality on bear populations. So far, eight collared bears have died in two years of study. Only one of these died naturally, the victim of an aggressive encounter with a larger bear. The other seven were killed by people; two were hit by cars, and the other five were taken illegally. Highway mortality (about 12 per year in Collier County) and other human-caused deaths may exceed natural mortality in southwest Florida black bears.

The maintenance of large forested tracts will be the key to the long-range future of the black bear in south Florida. Most bear/human interaction in south Florida occurs along the edges of protected forests found within public lands, such as Collier Seminole State Park, Florida Panther National Wildlife Refuge, Fakahatchee Strand State Preserve and Big Cypress National Preserve. Within this urban/wilderness interface, some black bears, especially young animals, find bird feeders, beehives, backyard pet food, chicken coops and even rabbit hutches irresistible. Some of this opportunistic feeding lasts only as long as it takes the bear to travel through the area. But some bears become habituated. These are the bears that become targets for intolerant humans.

The inevitable, unnatural losses of bears on roads and in suburban and agricultural areas may be replaced if healthy populations exist in well-protected core areas. Further, the maintenance of forests outside of large preserves makes it possible for dispersing males to travel successfully between populations. Ideally, the growing human population of southwest Florida will learn to better understand black bears and share in their conservation. Meanwhile, FO2's cubs are future replacements for adults living as far away as Lake Placid and as close as the Fakahatchee Strand.

David S. Maehr is the head of the Commission's panther research program in South Florida. His ongoing work includes southwest Florida black bear research.

COURTESY TECHSONIC INDUSTRIES

Find Those FISH

By R. G. Schmidt

For many years, saltwater boaters have enjoyed a navigation system that not only tells them precisely where they are, but can be used easily to return to the same spot at some time in the future. Unfortunately, the system, called LORAN-C (Long Range Aid to Navigation) is less reliable inland, since obstacles between the user and transmitting towers can cause problems. Enter Global Positioning System (GPS), an ultra high-tech network of satellites originally designed and orbited for use by the national defense forces.

LORAN uses signals transmitted from shoreline towers to a unit aboard an equipped boat. Computer chips convert the signals from several towers into an exact location, via triangulation. An antenna of six feet or more is needed to pick up adequate signals from several towers, a requirement of LORAN.

With GPS, however, since the signals are coming straight down from a satellite instead of being transmitted line-of-sight from a tower, the signal can be received virtually anywhere in the world, in any weather, with a receiving module only inches high. In addition, since GPS units can receive signals from up to nine satellites simultaneously and lock onto the five strongest, they provide incredible and heretofore unavailable accuracy.

The satellites actually beam two signals simultaneously – a course acquisition (CA) code and a more accurate "P" code strictly for military use. Even the civilian code is deliberately decayed to prevent its use by other countries, but GPS receivers, according to the Department of Defense, should be accurate within 100 feet. In practice, receivers have been known to be as accurate as 45 feet up to 95 percent of the time, according to the Panasonic Company.

A step up from GPS is DGPS, the Differential Global Positioning System. These more sophisticated units, like the NAV 5000D and NAV 5200D manufactured by the Magellan Systems Corporation, lock onto signals from Coast Guard radio beacon transmitters. ▷

The transmitters correct and transmit satellite information to DGPS receivers within 200 miles, giving the user accuracy up to 30 feet. I believe boaters can expect radio beacon fixes on the entire coast of the contiguous United States within three years, with accurate, affordable receivers offered by all the major manufacturers.

Since the possibility of running aground by being off course a mere four or five feet exists, GPS shouldn't be used to navigate unknown waters blindly. However, there's usually no need to get closer than that to a fishing spot.

I used an Eagle UltraNav GPS in a recent test on a Baker County lake. Running to within a few feet of all three fish attractor buoys, I stored the location of each as a "waypoint." I experimented, moving from one to another in a completely random pattern. I programmed the unit to "Recall Waypoint #1," (or #2, or #3) and moved the boat along the course displayed on the unit's screen, ignoring all "real" visual indications.

In each case, when the pre-set alarm indicated I had arrived, I was within easy casting range of the selected marker. Those markers could just as well have been a deep hole, a grass bed and an underwater obstruction stored in the unit's memory. The waypoints could have been stored earlier that day or on another trip entirely, since the UltraNav will store 100 waypoints even when disconnected from a power source. The locations could have been discovered using a separate depth finder or the UltraNav's built-in SONAR, which is as complete as any stand-alone unit. What's even better, the accuracy of a GPS unit can place you not only on a grass bed, but on a particular corner of the bed or a special bend in a flooded reservoir creek bed.

Here's a capsule description of how the units work, and how to use them. When you power up a GPS for the first time, it will prompt you to enter your current location, the time and, in some cases, your altitude. Degrees and minutes of latitude are as exact as you need to be. Once the unit has locked onto the satellites, it will determine the seconds. I initialized the UltraNav right in my driveway, after calling the nearest airport to get the local altitude, latitude and longitude. I punched that into the unit and let it do the rest.

Once on the water, the unit will keep track of your whereabouts, and you have several options of screen displays and ranges, all menu-driven. Since most units *are* completely menu-driven, all you need to do is follow the prompts. Selecting a "plot" mode, for example, will show a picture of your starting point with a line indicating course of travel, within your choice of a radius from 100 miles to 1/20 of a mile. Your destination can be a stored waypoint or you can tell most units to "go to" a given latitude/longitude combination. Your destination will also be marked, with a second line showing the most direct route.

If you turn on the alarms, the unit will alert you if you veer too far off course and/or when you arrive at your destination. You also can set shallow alarms to alert you to shoal areas or holes. The unit will display your course over ground (COG), speed over ground (SOG), water depth and other information, with several combinations available, or store a series of waypoints as one of as many as 20 "routes" and tell the unit to navigate that route. Some units, such as the hand-held Panasonic KX-G5500, can reverse the route and run the waypoints backwards. Beats the heck out of dropping bread crumbs on the water.

The latest wrinkle, available on such units as the Humminbird NS-10, will allow you to overlay the screen display with a map, giving you a clear and quick overview of your exact location. "Wow," you say, "these things will do everything but drive the boat for you." Um, well, . . . some units, for example just about all the Lowrance and Eagle units and the Magellan NAV 5200D, can be connected to an autopilot. Anyone for pinochle?

While mounted units take up little space, hand-held units such as this Panasonic take up even less, with little loss of features.

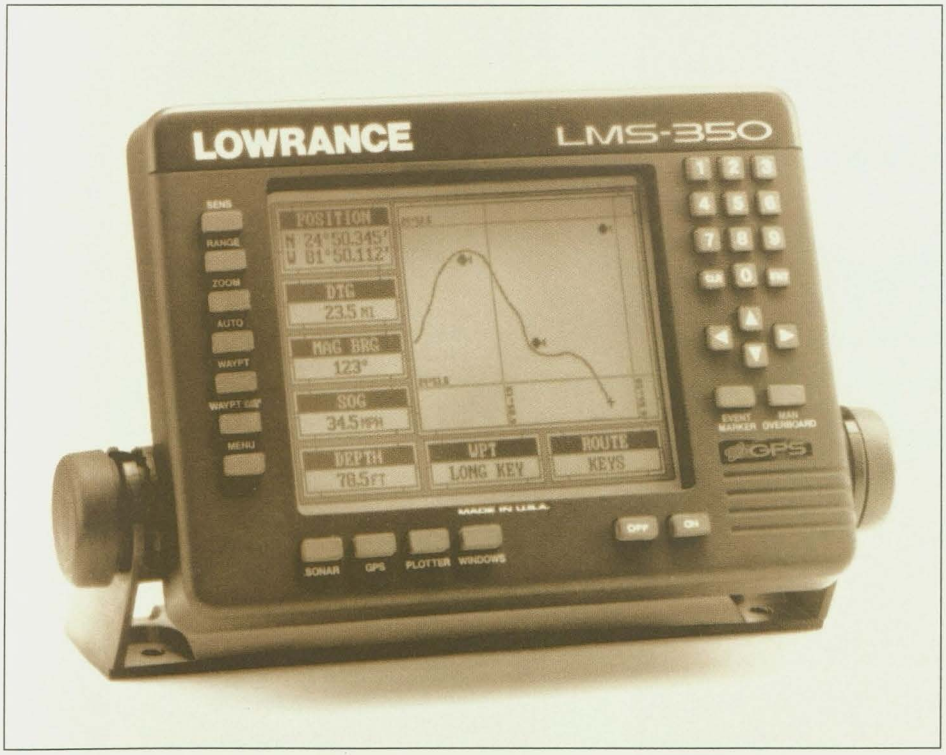
Today's GPS units give boaters and fishermen an incredible ability not only to navigate with accuracy, but the capability to return to previous hot spots unerringly. Twenty years ago, a military captain would have given his arm for this level of accuracy. Even though you don't need to navigate minefields, if you haven't thought about finding a way to get back to places you only fish once in a while or to that new spot you found just as dark was falling last night, it might be time you looked into GPS.

[Editor's Note: Free-lance writer R.G. Schmidt submitted this article to FLORIDA WILDLIFE after successfully using these units. This is not meant to imply endorsement by the Florida Game and Fresh Water Fish Commission of any product or company.]

R.G. Schmidt is a free-lance writer specializing in nature stories and is past vice president of the Florida Outdoor Writers Association.

COURTESY MAGELLAN

Magellan increases GPS accuracy with the differential-ready NAV 5000D and NAV 5200D, and the Magellan Differential Beacon Receiver (DBR).



COURTESY WALKER AGENCY

Lowrance and Eagle offer units with built-in SONAR. The screen can be switched from a bottom display to plotter and other navigation screens. The SONAR screen, here with "Fish I. D." on, also gives course, speed and distance remaining to destination. Note "Man Overboard" and "Event Marker" keys.

Wildlife Viewing

Lake Woodruff National Wildlife Refuge

Little Known and Likable

SUSAN CERULEAN

ROBERT CURTIS

By Susan Cerulean

Examine a map of the St. Johns River and you will notice that the river seems to take a break near DeLand as it meanders from Vero Beach to Jacksonville. An eastern fork of the mighty river collapses into a labyrinth of lakes, sluggish creeks (four with the word "dead" in their names), undisturbed cordgrass marshes and remote forested swamps.

This is Lake Woodruff National Wildlife Refuge. Lightly-used and little-known, this 19,545-acre natural area holds western Volusia County's sprawling development at bay. Together with the Ocala National Forest, the refuge protects a huge chunk of contiguous wildlife habitat, a rare commodity in central Florida today. More than 200 bird species take refuge here, including nesting bald eagles, herons and egrets, white and glossy ibis and 21 species of wintering ducks. Wildlife watching and fishing are the area's primary offerings.

Lake Woodruff was established in 1964 by the federal government as a migratory bird refuge. About 450 acres of the property are managed within three artificial impoundments surrounded by dikes, which form the heart of the easily-accessible public use area.

"We set the table with food for wading birds," says refuge manager Leon Rhodes. Water levels are manipulated to favor choice food plants and optimum foraging depths. Prescribed burning is used on both the marshy and forested portions of the refuge to enhance wildlife habitat.

If you visit Lake Woodruff, and you don't have your own boat, head for the public use area west of DeLeon Springs (see map on page 26). Stop at the headquarters for maps, regulations and checklists to orient yourself to the refuge.

Wildlife viewing: At the **public use area**, visitors can walk on miles of wide dikes surrounding impounded pools. Look for songbirds and woodpeckers along two trails that loop through pine and hardwood forests.

October through February are ideal months to visit Lake Woodruff. Ring-necked ducks, blue-winged teals and hooded mergansers are among several dozen species of overwintering waterfowl; wood ducks nest here and can be spotted year round. Bald eagles nest November through April; in 1992, two nests on the refuge yielded four eaglets.

Visitors can spot American alligators all year on sunny days. Sandhill cranes and most species of herons, egrets and ibis are common. Limpkins are a special treat, says local birder Barbara Samler. Huge clouds of tree swallows roost at sunset, December through February. Summertime brings broods of common moorhen and rail ▷

chicks, according to Samler. She also advises watching for sora and king rails close to the parking area. In July and August, American swallow-tailed kites are active over refuge creeks and swamps as they prepare to migrate south. Warbler migration and the arrival of hundreds of vultures to roost on Tick Island are noteworthy October happenings. Year round, river otters fish in canals and pools. Look for bobcat sign on the dike. Early risers might see white-tailed deer, especially on the **Jones Island Trail**.

Elsewhere in the refuge, access is by boat only. Airboats are prohibited. Birding is excellent, and you may spot a manatee in May or June. Canoes may be rented at DeLeon Springs State Recreation Area. A boat ramp several miles south of the public use area allows you to launch a boat into a canal that leads to **Norris Dead River**, and then to **Lake Woodruff**.

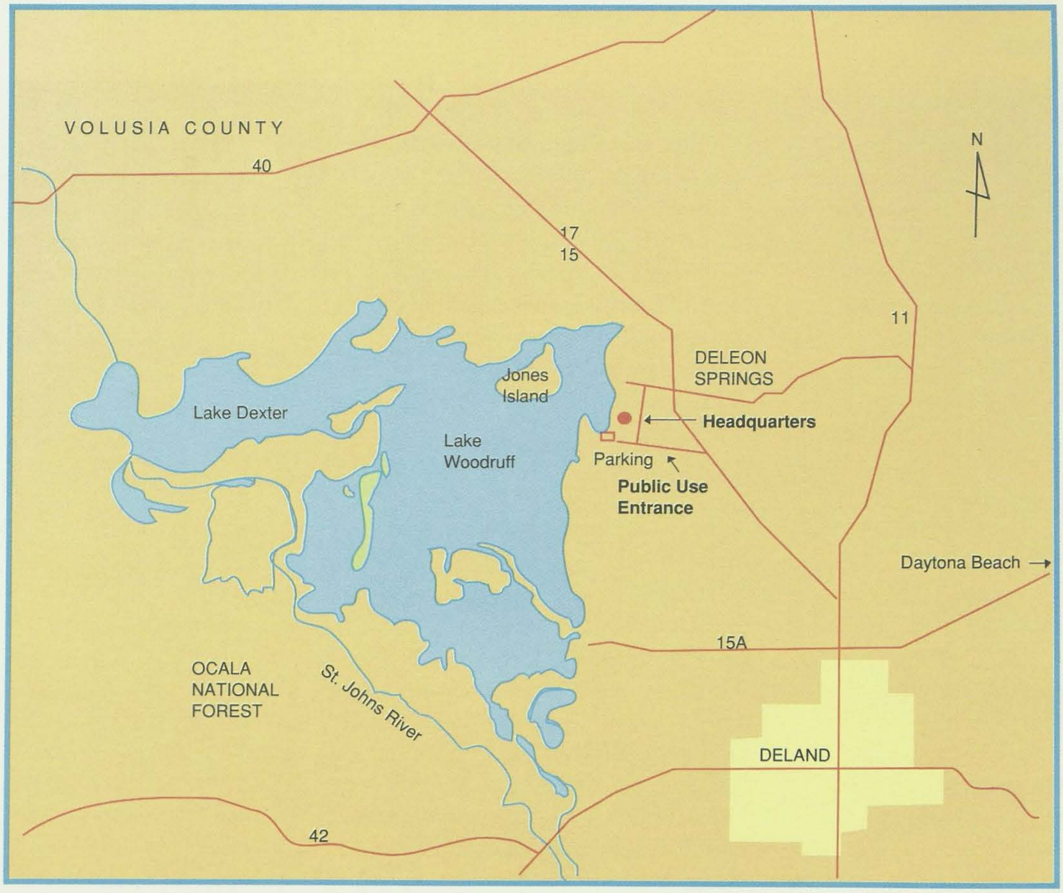
Other recreational opportunities: The refuge is open to fishing; a Florida freshwater fishing license is required. Bicycling (non-motorized) is permitted on the dikes. Limited hunting is permitted on the refuge. One 16-day archery hunt starts in late September, and two four-day muzzleloader hunts are scheduled during October. Apply in July, sending in a stamped, self-addressed envelope (see **For more information**). No campgrounds or picnic areas are located on the refuge, but ample sites are available in nearby DeLeon Springs State Recreation Area and the Ocala National Forest.

Hours of operation: Dawn until sundown, 365 days a year. The refuge office is open weekdays only, 8:00 a.m. to 4:30 p.m.

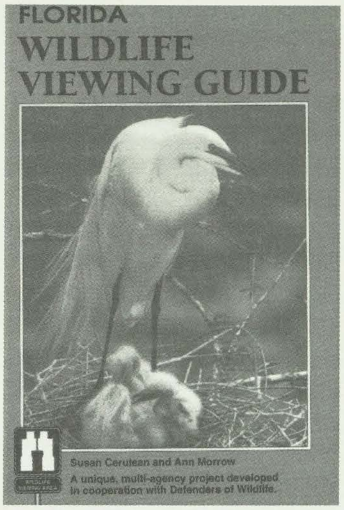
How to get there: From U.S. Highway 17 in DeLeon Springs, go west on Retta Street one block to Grand Avenue. Go south one-half mile on Grand to refuge headquarters (4490 Grand Avenue). The refuge public-use area is one mile west on Mud Lake Road. The site is found on map 74 in the *Delorme Atlas and Gazetteer*.

For more information: Contact Refuge Manager, Lake Woodruff National Wildlife Refuge, P.O. Box 488, DeLeon Springs, Florida 32130. Telephone (904) 985-4673.

LAKE WOODRUFF
National Wildlife Refuge



MARC EPSTEIN



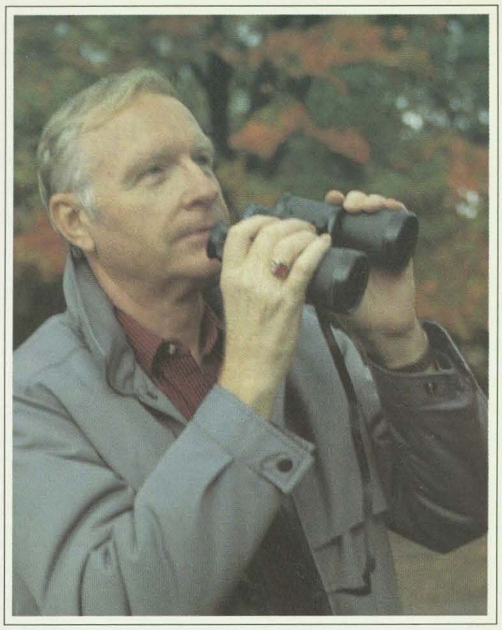
FLORIDA
WILDLIFE
VIEWING GUIDE

Susan Cerulean and Ann Morrow

A unique, multi-agency project developed in cooperation with Defenders of Wildlife.

The ***Florida Wildlife Viewing Guide***, coordinated by the Defenders of Wildlife and published by Falcon Press, will be available in November in bookstores, parks and refuges throughout Florida. The Commission is the major state sponsor for the book, which was written by Susan Cerulean and Ann Morrow.

LYNN STONE



wildlife artist
Donald Rust

Donald "Rusty" Rust is an outdoorsman partly because he enjoys the woods, but primarily because he's a wildlife artist. Through encounters with alligators and rattlesnakes as well as a bout with Lyme disease, Rust has persevered because he believes an artist cannot paint what he or she does not know. Rust advises aspiring artists, "Paint what you understand, whether it's the woods or things around your hometown.

Rust's hometown was Erie, Pennsylvania, but the artist has lived in Sarasota – lured there by a thriving artistic community – since the 1950s. He has collected a reference library of some 250,000 slides, an archive he thinks may be the largest held by a single artist. Rust estimates that one-third are of birds, one-third of animals and the remainder of landscapes, natural scenes and people. Some were taken with the two Nikon cameras that always accompany him on his treks in the woods. Others were taken by photographers Lee Kuhn and John Flowers, both of whom have been featured in FLORIDA WILDLIFE. Rust credits these slides as the inspiration for his superb use of light and extraordinary ability to capture the play of light on water in his realistic oil paintings.

"I like to work with back-lighting, as if looking directly into the light source, and often will highlight the shadowy side of my subjects around the edges," Rust said. "I'd term my work 'dramatic' – that's what I strive for. I fail a lot of times, but I strive. Maybe it's the lighting that enhances that quality – I like moody, foggy scenes, and late evening, sunset and moonlight.

"I photograph water and try to recreate it on canvas. A lot of artists sit in front of a blank canvas and try to 'create' something – but can't depict it because they've never been to the locale."

Several elements influence Rust's artistic choices for his wildlife paintings. While he refers to his slides for realistic effects, some of his landscape foregrounds and backgrounds are carefully-chosen composites of plants and other components selected to enhance the animal, which is the main subject. This was the case in the painting of the Florida panther that won FLORIDA WILDLIFE's 1993 annual cover print contest (see the cover of FLORIDA WILDLIFE's July/August issue). Rust also paints for market demand, using professional experience to make certain judgements.

"I do this for an income and have to consider demand, not only in the species I chose to do but in variables like color and composition."

Rust has considerable and varied clients for his works. He has done collector's plates for the Bradford Exchange, playing cards for Hoyle, illustrations for *Reader's Digest* and a portrait of master clown Emmett Kelly, Sr. that is part of the Smithsonian's National Portrait Gallery's permanent collection. The painting of two Florida alligators sunning themselves, featured on p. 31, won second place in last year's Pacific Rim Wildlife Art Show in Tacoma, Washington. The artist rarely attends art shows, however, although he has studied the work of other artists and corresponded with Norman Rockwell – who pronounced Rust's work "very good indeed."

For artists who struggle to preserve images of Florida's wildlife and natural environment in their work, Rust has a simple, practical bit of advice:

"Get out in the woods. It's not always fun in Florida when you're slogging through swamps, but it makes your work more interesting when you really know the wildlife and the locale."

– Deborah Hartley-McAndrew

▷

Rust

JAMES VALENTINE

Florida's Native Pine Communities

By Gil Nelson

Streams of soft, orange light filtered through the widely spaced canopy, bringing the first hint of day to the woodlands. As the darkness lifted, I could just discern the fan-shaped fronds of saw palmetto, followed in close succession by an ornate collection of showy wildflowers and dense clumps of low-growing grasses. The conspicuous blossoms of meadow beauty, yellow-eyed grass and crow poison swayed slightly in the early morning breeze, accompanied by the muffled whistling of the wind passing through the treetops, a trademark sound of the pinelands.

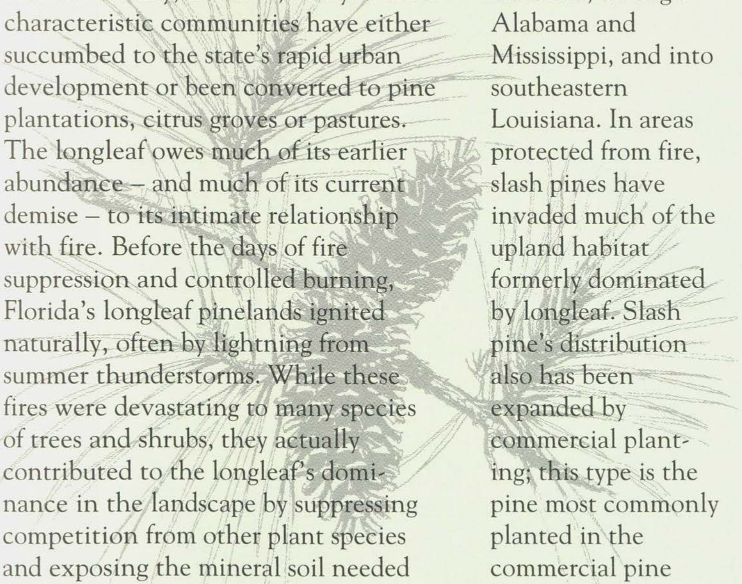
Even though tourists often envision Florida only in terms of palms and beaches, those of us who live here know pines and their remarkably complex communities are one of the state's defining characteristics. Perhaps no other inland landscape typifies Florida more distinctly than the pine woodlands that stretch across much of the state's upland and lowland terrain. Whether growing on sandy inland ridges, rolling upland forests or low, boggy wetlands, pine trees are ubiquitous and easily recognized.

However, no other forest type has been as drastically affected by Florida's development as the pine forest. Based on LANDSAT imagery collected between 1985-1989, pinelands, including natural and planted pine forests, have declined dramatically from 7.6 million acres to less than one million. Florida's longleaf pine ecosystem is home to dozens of plant and animal species as diverse as pitcher plants, bald eagles, striped newts and barking tree frogs. The endangered red-cockaded woodpecker inhabits mature longleaf pine forests, nesting and roosting only in living pine trees at least 50-75 years old. Apart from their natural beauty, old-growth pine forests are one of Florida's most diverse – and rapidly diminishing – habitats.

Florida's Native Pines

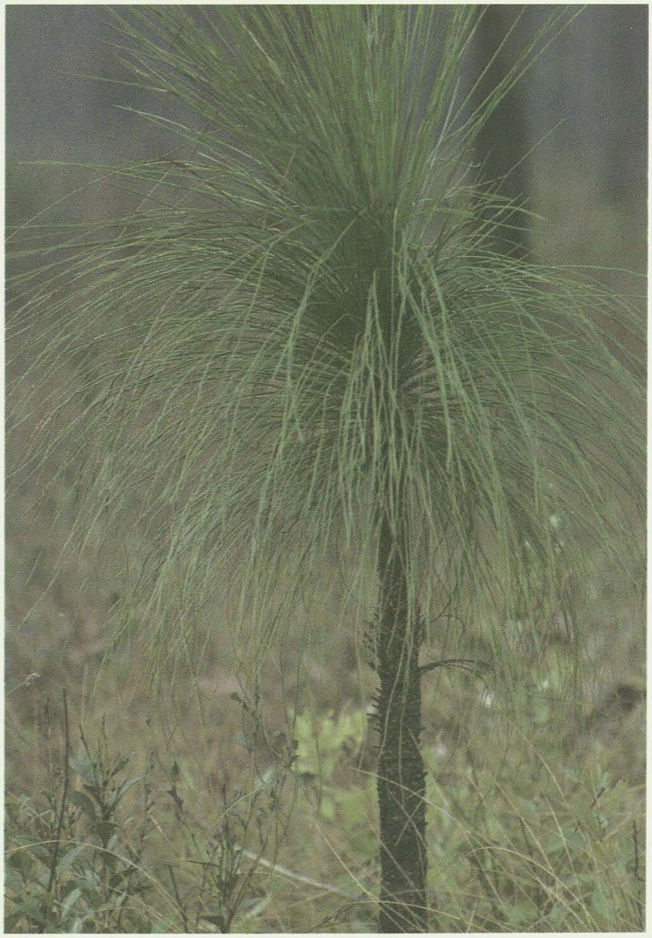
Florida supports seven different species of pine trees, three of which occur through most of the state, namely longleaf, slash and sand pines. The other four species, that include pond, loblolly, shortleaf and spruce pine, are generally less widely distributed.

Longleaf pines are the most stately of Florida's native pines. They can be readily identified by their huge cones (which often measure eight inches in length) and the long, dark green needles clustered in large tufts near the ends of the branches. In Florida's earliest days, huge, open stands of longleaf pine stretched across much of the state's sandy uplands, from north Florida to south central peninsular Florida. Today, however, many of these characteristic communities have either succumbed to the state's rapid urban development or been converted to pine plantations, citrus groves or pastures. The longleaf owes much of its earlier abundance – and much of its current demise – to its intimate relationship with fire. Before the days of fire suppression and controlled burning, Florida's longleaf pinelands ignited naturally, often by lightning from summer thunderstorms. While these fires were devastating to many species of trees and shrubs, they actually contributed to the longleaf's dominance in the landscape by suppressing competition from other plant species and exposing the mineral soil needed for seed germination.



The longleaf is perhaps the most fire-adapted tree in eastern North America, preserving itself by remaining in a grass-like stage for its first several years. Depending upon soil, moisture and competition, this grass stage may last as few as three or as many as twenty years, surviving fire after fire. Once the stem begins to elongate, the tree shoots up quickly, sometimes growing as much as a yard or more in only twelve months. Such adaptation and rapid growth usually elevates the young tree's tender growing tip well above the fire height. With the advent of human-controlled fire exclusion and modern tree-farming practices, however, many outstanding longleaf forests have been converted into far different plant communities, thus endangering the existence of the once-dominant longleaf forest.

Ranging from the state's northern border to its southern tip, slash pine is the most widespread species in Florida. Botanists recognize two varieties of slash pine and refer to these by the common names "slash pine" and "south Florida slash pine." The slash pine is most typical of Florida's low, wet flatwoods but is native to the southeastern coastal plain from South Carolina, through Alabama and Mississippi, and into southeastern Louisiana. In areas protected from fire, slash pines have invaded much of the upland habitat formerly dominated by longleaf. Slash pine's distribution also has been expanded by commercial planting; this type is the pine most commonly planted in the commercial pine forests of northern Florida. The south Florida slash pine is an endemic species that occurs predominately in southernmost Florida. It is the only member of the genus whose distribution extends into the Florida Keys and it is the dominant species of the south Florida pine rocklands, one of our state's rarest natural commodities. In the Keys, these pines often tower above tropical hardwoods and are a vital component of the habitat for the dwindling population of tiny, endangered Key deer.



GIL NELSON

A young longleaf in its early growth spurt stage of life.

Pond pine is another of Florida's fire-dependent species, often inhabiting bayheads and the more poorly drained pine flatwoods. The pond pine is widespread only in northern and north central Florida and is a relatively easy tree to recognize. Many look twisted and deformed, almost as if they are diseased or have been deprived of nutrients. Some specimens, particularly those that have been subjected to fires, also are characterized by numerous ▷

GIL NELSON

Colorful staminate (male) cones on a slash pine.

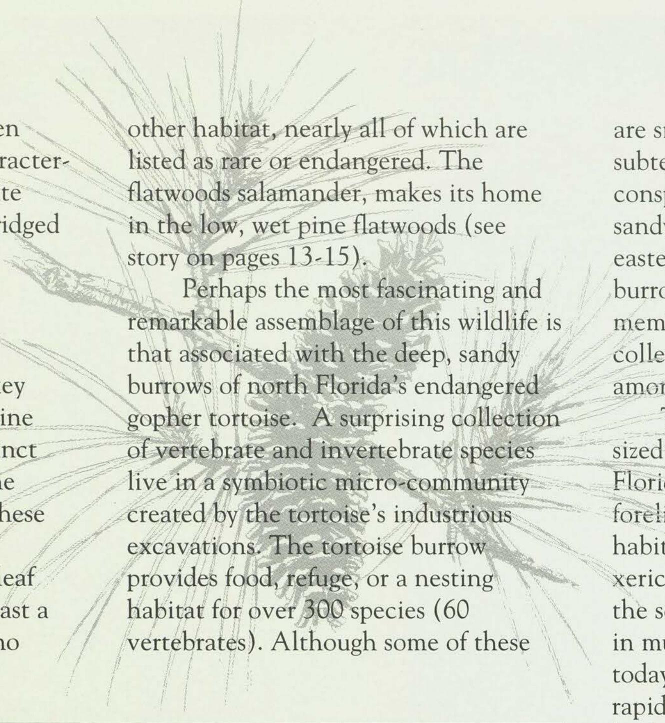
short branches and scraggly twigs that sprout from many points along their trunks. Superficially resembling loblolly pine, pond pine is readily distinguished by its short, top-shaped cones which persist in the tree for many years. The cones usually remain tightly closed until the heat of a forest fire causes them to open and shed their winged fruit. Then, like the longleaf, they take advantage of the newly exposed soil to sow their seeds.

The loblolly pine, unlike the three previous trees, is an aggressive, opportunistic species that was probably much less common in earlier times than today. A cursory observation might leave the impression that the loblolly is a natural component of Florida's mature upland woods, but early botanical records tell us that it once was found only sparingly in the state, almost exclusively in the bottomland forests bordering rivers and swamps. Extending from north Florida southward to north central peninsular Florida, its current widespread distribution is evidence of its success in colonizing cut-over longleaf forests or fallow agricultural lands.

The remaining three native Florida pines can be distinguished from the above species by their extremely short needles and from each other on the basis of their preferred habitats. The sand pine is most common on inland white sand ridges in the central part of the state, but also is well-known along the coastal strand of the northwest Florida panhandle. The sand pine is most like the spruce pine in appearance. Both have smooth branchlets, and young trees of both species have smooth, grayish bark. The bark of older spruce pines is quite hard, very closely furrowed, and distinctly resembles one of Florida's many hardwoods.

The most magnificent stands of sand pine are found in ancient, relict dune ridges, many of which are found throughout the sprawling Ocala National Forest. The spruce pine, on the other hand, occupies rich mesic woods and calcareous bottomlands in association with mixed hardwood forests. It is not found on coastal or inland white sand ridges. Possibly the spruce pines growing closest to the coast are those found along North Line Road in the Panacea Unit of the St. Marks National Wildlife Refuge near Tallahassee, and even these trees are situated on the edge of a swampy, hardwood hammock that is underlain closely with limestone.

The third pine with short needles – and the most restricted distribution in the state – is the appropriately named shortleaf pine. Most often found in the fertile uplands of northwest Florida's hill country, it sometimes occupies mixed hardwood stands in conjunction with the spruce. Although both the shortleaf and spruce have relatively short needles, their trunks are quite different. The mature shortleaf pine tree's bark usually consists of large, flat, reddish to reddish-brown plates



separated by shallow furrows. Even younger shortleaf pines have characteristically pine-like bark that is quite distinguishable from the closely ridged bark of the spruce pine.

Importance to Wildlife

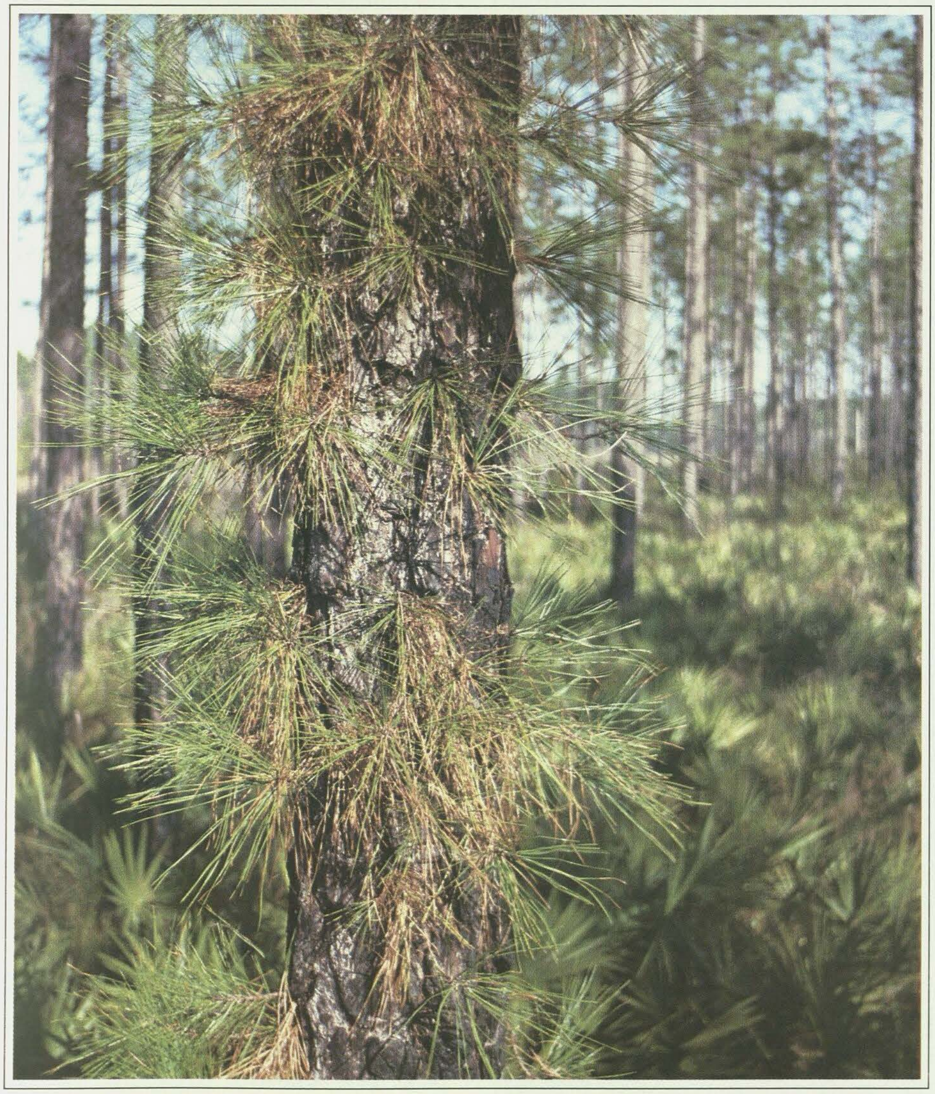
Pine flatwoods, longleaf/turkey oak/wiregrass uplands and sand pine scrub all represent relatively distinct habitats whose names indicate the community's dominant plants. These landscapes provide homes to an amazing variety of wildlife. Longleaf forests, for example, support at least a dozen animals that are found in no other habitat, nearly all of which are listed as rare or endangered. The flatwoods salamander, makes its home in the low, wet pine flatwoods (see story on pages 13-15).

Perhaps the most fascinating and remarkable assemblage of this wildlife is that associated with the deep, sandy burrows of north Florida's endangered gopher tortoise. A surprising collection of vertebrate and invertebrate species live in a symbiotic micro-community created by the tortoise's industrious excavations. The tortoise burrow provides food, refuge, or a nesting habitat for over 300 species (60 vertebrates). Although some of these are small species that rarely leave their subterranean homes, others are more conspicuous and range widely in the sandy forest. The Florida pine snake, eastern indigo snake, Florida mouse, burrowing owl and gopher frog are all members of this motley pinewoods collection. Each of these is counted among Florida's imperiled wildlife.

The gopher tortoise is a medium-sized turtle that differs from all other Florida turtles by having flattened forelimbs adapted for digging. Its habitat extends from north Florida's xeric woodlands to the sandy ridges of the south-central peninsula. It once was in much greater abundance than it is today, but its numbers have declined rapidly in the last several decades due both to increased development and modern forestry practices that tend to destroy its favored habitat. As the tortoise declines, so will the suite of wildlife species that depend on its underground burrows, such as the Florida gopher frog and eastern indigo snake.

The indigo snake is a magnificent creature that typically measures five to six feet in length but is known to reach lengths of more than eight feet. It is a relatively docile animal that often forages in wetter areas but nevertheless is a characteristic member of these dry, sandy pinelands. Its survival in such areas is linked directly to the cool, moist interior of the tortoise burrow, without which it would have few places to seek refuge.

The gopher frog is also highly dependent on the tortoise burrow. Though it has sometimes been observed in stump holes or human-made divots, as well as burrows of the oldfield mouse, the tortoise burrow provides this amphibian with the most conducive surroundings. The gopher frog is classified as a true frog, closely related to the bullfrogs and pig frogs that inhabit the edges of ponds, swamps and other bodies of standing water. Its nocturnal habits generally make it a difficult species to find in the daylight. However, directing a flashlight beam down the mouth of a gopher tortoise ▷



GIL NELSON

A pond pine's short branches extend from its trunk. The tree has been scarred by fire which probably contributed to these opportunistic shoots.

Sherman's fox squirrel, the mangrove fox squirrel and the tiny, endangered Key deer are all rare species that make their homes in the pinelands.

burrow often will yield reflections of the gopher frog's large, greenish eyes.

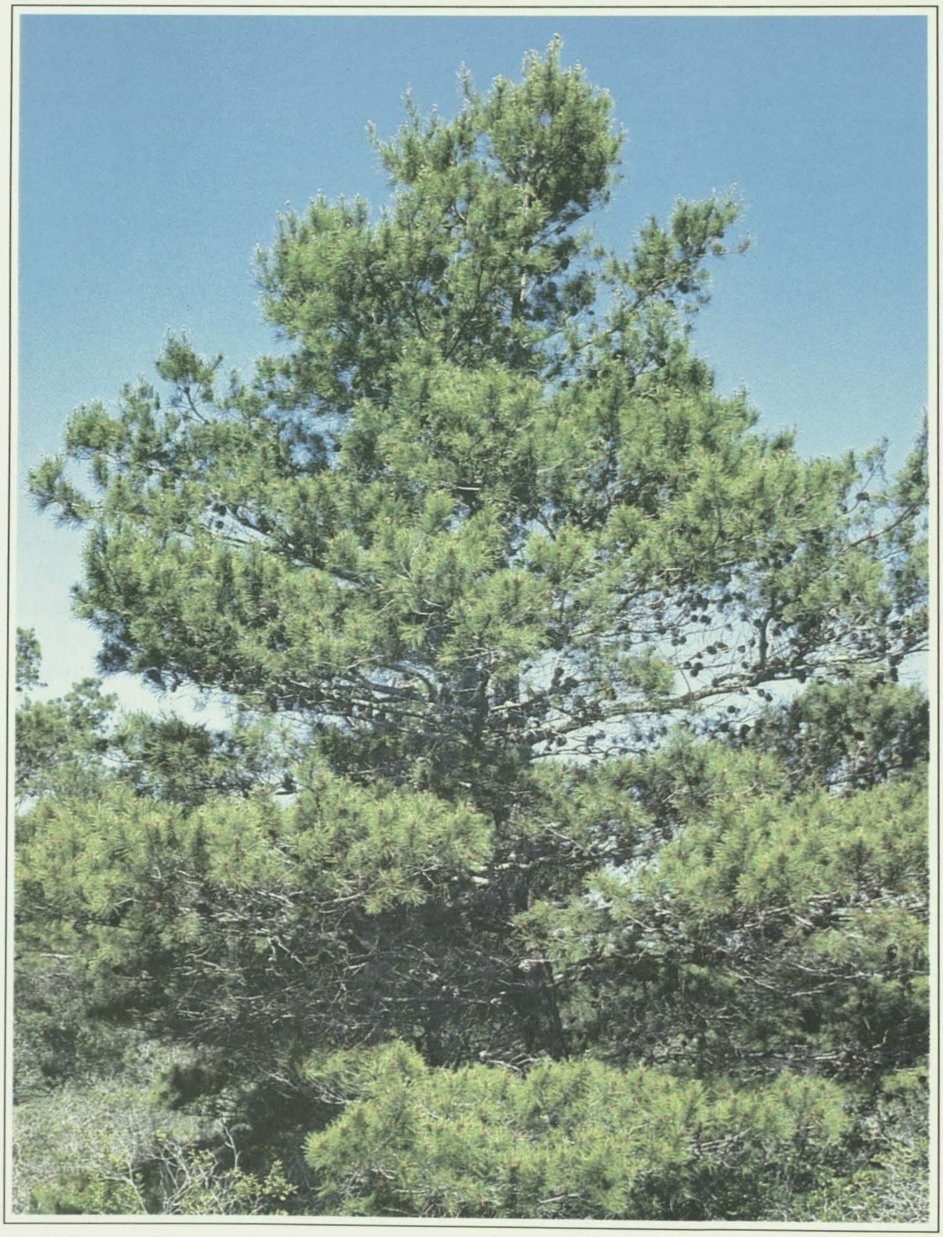
The threatened Florida mouse, which is equally at home in the sand pine scrub as well as longleaf turkey oak woods, is one of several mammals common in the pinelands. Populations of both the Sherman's fox squirrel and the mangrove fox squirrel, as well as the ecologically isolated Key deer, are all protected species that make their homes in the pinelands. Even the endangered Florida panther occasionally visits such habitats to find sustenance. Other common species include the white-tailed deer, eastern cottontail rabbit, raccoon, armadillo and opossum.

But landbound species are not the only critters that take up residence in the piney woods. Birdwatchers are more likely to be attracted by such species as the hard-to-see Bachman's sparrow, the endangered red-cockaded woodpecker, or an assortment of more common species such as the eastern bluebird, pine warbler, eastern meadowlark, rufous-sided towhee or brown-headed nuthatch. Hunters recognize certain of our pinelands as important feeding grounds for bobwhite quail and wild turkey.

No matter if one's interest is in game or nongame species, there is little question that Florida's several pine dominated woodlands encompass some of the state's most important ecological communities. Whether one appreciates them for their simple beauty, diverse flora or bounteous wildlife, our pinewoods offer spectacular opportunities for enjoying Florida's natural environment and are one of the state's most important natural legacies.

Gil Nelson is a naturalist free-lance writer and photographer. His new book, ***Trees of Florida, a Field Guide and Reference****, is being published by Pineapple Press (and is scheduled for a January publication date).*

Botanist Maureen MacLaughlin contributed to this article.



BARRY MANSELL

A sand or scrub pine.

Holey Land

Wildlife Management Area Restoration

Text by Lt. Jim Huffstodt and Photographs by James R. Schuette

Our airboat skitters across the sawgrass marsh as we speed down a narrow ribbon of trail in the Holey Land Wildlife Management Area (WMA) in southwestern Palm Beach County.

Game and Fresh Water Fish Commission wildlife biologist Jeff O'Dell eases back on the throttle when we approach a tangle of willows. He cuts the engine and, taking care not to get too close, we quietly drift toward a wading bird rookery inhabited by nesting tri-colored, little blue and green-backed herons, as well as snowy and great egrets.

The thousand-nest rookery swarms with life. Adult birds take to the air. Their calls float across the sea of grass that stretches out to the horizon.

Today O'Dell takes a LORAN navigational reading to plot the location of the newly discovered nests. This is one more piece of information that will help wildlife biologists manage and protect this valuable wildlife habitat.

"Last year this rookery wasn't here," O'Dell said. "We've also documented an anhinga breeding colony and a night heron colony. And, we've observed an estimated 150 endangered wood storks and 50 roseate spoonbills roosting in the marsh."

This is environmental good news for the Holey Land, according to Jim Schuette, who supervises the Commission's management efforts on the area.

"We recently discovered two nesting colonies of snail kites, several of which had successfully fledged young," Schuette said. "We estimate there were 35 successful nests present during this summer's breeding season."

The presence of the endangered snail kites and the wading bird rookeries are important indications that ▷

A biologist examines a clutch of snail kite eggs.

long-term restoration of the 35,350-acre WMA is on track. What was recently a drained marsh is being restored to its original Everglades sawgrass habitat.

The Holey Land restoration was proposed in the 1960s. The current water level manipulation complements the Surface Water Improvement and Management Plan, designed to enhance water quality. In 1990, the Commission and the South Florida Water Management District (SFWMD) agreed on a water schedule that imitates natural fluctuations of water, called the hydroperiod, through the year.

The large WMA consists of a rich layer of peat created through the centuries as sawgrass died and decomposed. Schuette said this rich layer of muck has actually caught fire during past dry spells. The earth has burned, then smoldered for months at a time. In some areas, fires burned down to the limestone bedrock.

Biologists feared that, over the years, repeated muck fires could drastically alter the area's habitat.

The restoration plan was designed to limit muck fires, minimize the effects of agricultural run-off from the north, favor sawgrass over invasive wax myrtle and provide appropriate habitat for a wide range of Everglades species, including threatened and endangered wildlife.

Since the SFWMD began pumping water into the area in January 1991, a dramatic transformation has occurred. The drained marsh is now blooming with life. The sky fills with wingbeats of wading birds as thousands return to their rookeries at dusk, and the alligator population has tripled in just one year.

This idyllic picture is threatened by ongoing negotiation between the SFWMD and agricultural interests north of the Holey Land. Lt. Col. Dan Dunford, the Commission's Everglades regional director in West Palm Beach, worries that the Holey Land – as well as the nearby 29,370-acre Rotenberger WMA, and the 4,460-acre Brown's Farm WMA – could turn into treatment areas for agricultural run-off.

"Conservationists can only view using public wildlife areas to clean up water flowing in from privately owned agricultural lands further north with alarm," Dunford said. "Nature didn't create these marshes to cope with the excessive phosphorous associated with modern agricultural practices," Dunford said. "Dumping phosphorous into these areas promotes the growth of cattails over native sawgrass vegetation.

"Cattails are indicators that the entire ecosystem is being degraded," Dunford said. "As cattails spread throughout the sawgrass marsh ecosystem, they eliminate open water sloughs that are important foraging areas. Without rich forage, birds will cease to nest in the Holey Land.

"This is one spot in south Florida to which we can point and say that we have turned back the environmental clock," Dunford said. "This restoration effort is one of the Commission's highest priorities in heavily developed south Florida.

"Clean water and an appropriate hydroperiod are the keys to restoring the marsh," Dunford said. "The project has wide acceptance from the conservation community. Fred Fisikelli, president of the Everglades Coordinating Council and a member of the Dade County Airboat and Halftrack Club, was one of many conservationists who lent their support to the restoration effort."

Dunford expressed concern that restoration efforts could be sacrificed as part of the Everglades clean-up compromise currently being considered by the Governor and his cabinet. The Holey Land sawgrass marsh is rebounding after decades of environmental neglect, Dunford said. Future decisions made in the boardrooms of Tallahassee and Washington will determine the quality and quantity of water flowing into the area, and shape its environmental future.

At stake is the resurrection of an important remnant of the great Everglades system – that "Sea of Grass" stretching from horizon to horizon.

Jim Huffstodt is the public information coordinator in the West Palm Beach office.

1994
FLORIDA WILDLIFE Photo Contest

1. Only original 35 mm slides and 2¼" x 2¼" color transparencies are eligible. Composite slides are not eligible. DO NOT SEND PRINTS, NEGATIVES OR DUPLICATE SLIDES. Print your name on the slide mount for each entry.

2. Enter in as many categories as you like — up to three entries per category.

Category A – WILD BIRDS

Category B – WILD ANIMALS (wildlife other than birds including reptiles, amphibians, insects)

Category C – FLORIDA'S NATURAL ENVIRONMENT (any photo in which landmarks, scenery or inanimate objects are featured)

3. Fill out an entry form for each category in which you compete. Photocopied forms are acceptable if signatures are original. Be sure to circle the appropriate category letter for your entry.

4. Entries must be accompanied by a self-addressed, stamped envelope for each category. Be sure to attach sufficient first-class postage for their return (do not send money). Entries will be returned after winners are published in the January-February 1994 issue.

5. Each slide entry must be attached to a 3" x 5" card with the photographer's name, mailing address, telephone number and Social Security number printed or typewritten on the card. Although care will be taken with submitted material, FLORIDA WILDLIFE and its agents will not be responsible for damage or loss of entries.

6. ONLY SLIDES TAKEN IN FLORIDA ARE ELIGIBLE. Captive, domestic and exotic species are not eligible. Employees of the Florida Game and Fresh Water Fish Commission are not eligible. Only photographs that have never been published in a magazine are eligible.

7. Entries must be mailed to FLORIDA WILDLIFE PHOTO CONTEST, 620 South Meridian Street, Tallahassee, Florida 32399-1600 and must be received by October 15, 1993.

8. Any entry not meeting all the rules will be ineligible. Decisions of the judges will be final. Cash honorariums will be awarded upon publication.

Contestants by their entry agree that FLORIDA WILDLIFE may publish their photographs for promotion of the magazine.

Official Entry Form

CATEGORY (Circle one): A B C

Photograph No. 1 was taken in ____________ County
and is of ____________________________
Photograph No. 2 was taken in ____________ County
and is of ____________________________
Photograph No. 3 was taken in ____________ County
and is of ____________________________ .

No. of Entries: ____

Photographer: ____________________________
Mailing Address: ____________________________
City: __________ State: ______ ZIP: ________
Daytime Phone: (   ) ____________________

I certify that I am the photographer and owner of these entries (photographs) and that all entries were taken in Florida, and I hereby give the Florida Game and Fresh Water Fish Commission my permission to publish my entries in FLORIDA WILDLIFE in accordance with the contest rules.

Signed (Entrant): ____________________________
Social Security Number: ____________________________

Mobility-Impaired Hunting in Florida

By Richard Farren

RICHARD FARREN

"Everyone eventually becomes disabled," said David Jones, president of the Florida Disabled Outdoors Association (FDOA). "It may be old age that gets you, but at some time in your life, unless you die a sudden death, you will no longer be the average able-bodied person the world is built for."

At any given moment, 43 million Americans are disabled. A disability could be the result of a car accident, a slip in the bathtub, a back injury or failing eyesight. But the odds are, at some time in our lives, we will be disabled.

As comic strip sage Pogo might say, "We have met the disabled, and they are us."

I confronted this reality recently when my mother broke her leg. Suddenly, a proud, independent woman needed extra phones and ramps. We abruptly realized how important those handicapped parking spaces really are.

Jones, who was injured in a hunting accident, now attributes resuming a normal lifestyle to his fervent desire to return to the outdoors.

"My favorite memories were those shared with family and friends on outdoor excursions. Boating, fishing, hunting and just plain enjoying nature were the things I yearned to have back."

Confined to a wheelchair and without the use of one arm, Jones tried to commence outdoor activities, only to find "many of the things I had once taken for granted now seemed impossible to accomplish."

Then he took part in a 1991 mobility-impaired hunt sponsored by the Florida Game and Fresh Water Fish Commission at the Three Lakes Wildlife Management area in central Florida. This was the second year the Commission had held this type of hunt.

"It was a good program," said Jones, "but I also saw a need to improve the quality of the hunt and provide additional hunts at other sites around the state."

Determined individuals like Tim Brush, who is also confined to a wheelchair, had approached the Commission with many good ideas and intentions in the past. Jones decided to organize FDOA, a non-profit group dedicated to improving outdoor accessibility for all people. He began to lobby the Commission to expand its program and introduce mobility-impaired hunts to other parts of the state.

"The Commission was very receptive," said Jones, who worked closely with Vic Heller, assistant director of the Division of Wildlife.

"We decided to look for new pieces of property for the hunts," added Jones. "That way, current hunt quotas in wildlife management areas could remain the same, but more opportunities could open for mobility-impaired hunters."

Holton Creek Wildlife Management Area

The Suwannee River Water Management District had just such a place. Holton Creek is a 2,509-acre property purchased through the Save Our Rivers Program.

"Holton Creek is an area the Commission would not have taken to manage for hunting because it was too small," says Heller, "but it met all the criteria for a good mobility-impaired hunt, so we took it."

Jones describes the Holton Creek Wildlife Management Area as having diverse plant and animal life, river swamps and a rolling landscape dotted with sinkholes and springs. The Suwannee River borders one side of the property.

An existing road system that would enable mobility-impaired hunters to reach hunting sites was the factor that clinched the deal. A quota permit system was developed to determine hunter eligibility and the first of two five-day hunts was held in October 1992.

"FDOA participated in the administration of the hunt, with members volunteering as check station workers and helping to lay out stand sites," said Heller. "David and his organization have been good about doing their part with 'in-kind' services which make these types of hunts possible during times of tight budgets."

The Hunts

The mobility-impaired hunts, like most hunting experiences, do more ▷

RICHARD FARREN

CAROLEE BOYLES-SPRENKEL

Henry Flores successfully hunts from horseback.

than add meat to the freezer. They're an opportunity for people overcoming similar problems to gather and share ideas and solutions for accessing the outdoors.

Innovations are ingenious, from light-weight rifles to climbing tree stands that actually carry a wheelchair high into a tree. Portable, hydraulic tree stands can be pulled behind an all-terrain vehicle. One quadriplegic hunter has designed a computerized gun that uses an Atari joy stick for aiming, and a "sip and puff" straw mechanism for arming and firing.

All the hunters have overcome obstacles and challenges and added quality to their life. Johnny Swails, a Jacksonville resident who was paralyzed in a car accident three years ago, discovered inner abilities he never suspected he had.

After his accident and a period of recuperation, Swails said he "sat around doing nothing." Then he noticed an article about Florida Handicapped Sportsmen, another organization forming to provide increased fishing and hunting opportunities for the disabled.

Swails contacted the group about a three-day hunt it was arranging, even though he had never hunted before.

"I didn't know if I could go three days," said Swails. "But I used it to challenge myself. If I could do this, I could do anything."

With the support of a good friend, he borrowed a rifle and went deer hunting. Camping in 30-degree weather, Swails shot one deer the first afternoon and another the next day.

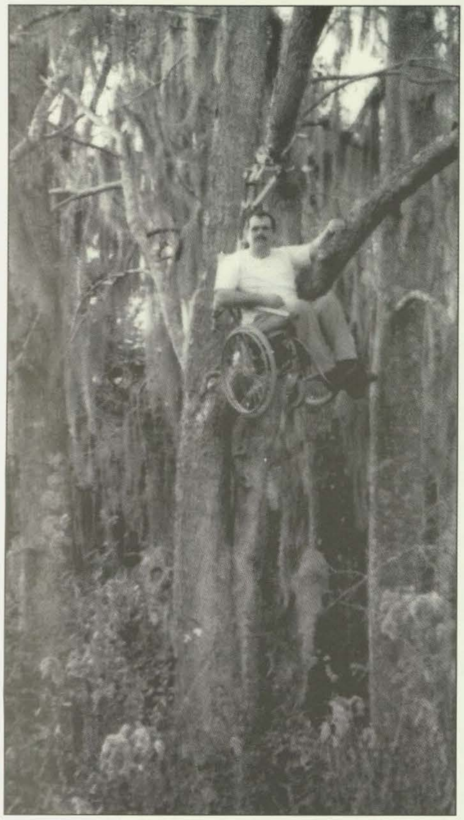
"It was great!" said Swails, "I was around guys who had been in wheelchairs for 18 years. They taught me how to do things, how to handle my disability. That was the part I was impressed with, how these guys really cared about each other."

"That's when I decided my life would go on," he said. "Up to that point I had hardly been out of the house; afterwards, I realized I could do anything."

Future Hunts

The future of mobility-impaired hunting in Florida looks bright. This year, hunts will be held at Three Lakes WMA, Holton Creek WMA, St. Marys WMA and St. Marks National Wildlife Refuge. Although the application period was mid-July, a few permits may still be available for the Three Lakes hunt, scheduled for Nov. 5-7. Applications for the Mobility-Impaired General Gun Hunt at St. Marks needed to be requested by Aug. 20. At Lower Suwannee National Wildlife Refuge, permits to use ATVs for access to one area of the refuge are issued to qualified individuals for regular hunt dates. Write to Lower Suwannee NWR, Route 1, Box 1193-C, Chiefland, FL 32626.

Jones currently is working with various agencies on establishing other mobility-impaired hunts. One possible site is Rock Springs Run, a wildlife management area in Lake and Orange counties. Another possible site is the



RICHARD FARREN

Not content to hunt from the ground, Henry Flores hoists himself into trees.

John G. and Susan H. Dupuis Jr. WMA in Palm Beach and Martin counties. Members of the Palm Beach County Airboat and Halftrack Conservation Club have volunteered manpower to help make that hunt a reality.

In both instances, local and regional biologists with the Commission are evaluating manpower and money needs, as well as the impact on local resources. Jones also has been meeting with representatives from Eglin Air Force Base to work out plans for a mobility-impaired hunt that could take place as early as this season.

Most, though not all, hunts in Florida are open to mobility-impaired hunters. Where circumstances warrant, the Commission allows special permits to accommodate mobility-impaired hunters on regular quota hunts. These permits allow for exceptions, including the use of crossbows on archery hunts, or permission to drive off established roads. For more information on these special permits, contact the regional offices listed below.

The Commission distinguishes between disabled hunters, and those who are mobility-impaired. "A doctor must certify that a person is totally and permanently disabled," said Eddie White, quota hunt coordinator, Division of Wildlife. Disabled hunters are exempted from most license and stamp requirements. Persons permanently confined to a wheelchair, persons requiring the use of mechanical aids such as crutches or walkers or persons with single-leg amputations are designated as mobility-impaired. Final eligibility is determined by a screening committee.

For information on mobility-impaired hunts contact Eddie White, Division of Wildlife, the Florida Game and Fresh Water Fish Commission, (904) 488-3831, or the regional office nearest you: NW Region, Panama City, (904) 265-3676; NE Region, Lake City, (904) 758-0525; South Region, Lakeland, (813) 648-3203; Everglades Region, (407) 640-6100.

For information on the Florida Disabled Outdoors Association contact David Jones at 2213 Tallahassee Drive, Tallahassee, FL 32308; (904) 668-7323.

For information on Florida Handicapped Sportsmen, Inc. contact president Morris Ingle, 1619 Elsie Street, Green Cove Springs, FL 32043; (904) 284-2217. Ingle reports the group is hoping to organize three hunts on private land this season.

About Henry Flores

Henry Flores is a wheelchair-bound hunter who hunts with a modern gun, a black powder weapon and a bow. Henry also has taught Hunter Education with the Commission's volunteer program.

He's not content with hunting from the ground, so he's figured out ways to get himself up into trees to hunt. At first, he simply tied himself into his chair and hauled himself up with two block-and-tackles.

"I tied four ropes to the wheelchair," he said. "Then I threw one block-and-tackle up on a branch and tied the other one in front of me, and just pulled myself up. The first time I did it, I was behind the garage. My mother came looking for me and about had a heart attack."

Henry found the ropes got in the way. So he designed and built a tree-climber that utilizes a boat winch.

Later, Henry wanted to be more mobile and hunt from horseback.

"I called Herbert Thompson, a horse trainer in Live Oak, and he came and trained my mare for me. Within a week, he taught her to lie down." Once Henry learned to transfer himself from the wheelchair to saddle, the mare was trained to stand up on command.

Herbert and Henry then trained the horse to let Henry shoot from her back. The mare also learned to pick up anything Henry dropped and retrieve quail he shot. These days, his equine companion is Clyde, a paint gelding that Henry trained himself.

– Carolee Boyles Sprenkel

It's The Law

By Inspector Kyle W. Hill

Question: How can I best safeguard my family on a boating trip? Are there any new boating safety laws?

Answer: Now all children under six are required to wear a personal floatation device (PFD) on vessels less than 26 feet in length while the boat is under way. Also, all persons operating, riding on or being towed by a personal watercraft (jet ski) are required to wear a PFD.

To best safeguard your passengers on boating trips, take the following precautions. First, you and your passengers should not drink alcoholic beverages. Alcohol is a primary contributor to serious boating accidents. Drinking disorients the operator and impairs boat handling; it makes those aboard less aware of the recklessness of other boaters.

Because the combination of wave action, wind and sun intensifies the debilitating effects of alcohol on the body, even light drinking can have tragic results. Under current Florida law, anyone operating a vessel with a blood alcohol level of .05 percent is considered legally "impaired," and subject to arrest. The Legislature also passed a new standard for intoxication this year for boaters. The new law, which becomes effective January 1, 1994, lowers the percentage of alcohol that can be in the system before one is considered legally drunk. The old standard was .10 percent; the new standard is .08 percent.

The second step in safe boating is to know the "Rules of the Road." Learn who has the right-of-way under boating law, and how to read channel markers/buoys. The Commission offers an excellent eight-hour Safe Boating Course free to the public. Contact the nearest Commission office.

The third step is to wear a PFD at all times on the water. Although not legally required, except for children under six, wearing a life jacket will do more to save lives than any other measure. Accidents do not occur only when a vessel is under way. Moored boats are frequently hit by reckless operators, and the occupants may go overboard, or the vessel may sink.

Many boaters mistakenly believe they don't need a PFD if they can swim. Yet drowning is the number one cause of death in boating accidents. Many drowning victims knew how to swim but were unable to because they were knocked unconscious, became disoriented or were injured and couldn't float.

The average person has trouble holding his or her breath more than one minute. Time yourself and see how long you can hold your breath. If you are thrown overboard and can't stay afloat, this may be all the time you have left to live. How long can you float or dog paddle? Most people cannot swim the distance necessary to reach shore, even in small lakes. Without a life jacket, your survival chances are greatly reduced.

The next time a wildlife officer checks you from the water, notice that he or she is *wearing* a PFD, even in the hottest weather. Wildlife officers wear them at all times while on the water. This policy has saved the lives of several officers. Follow the example of these professionals. Like seat belts in automobiles, life jackets aboard vessels are one of the primary safeguards for you and your family.

MERCURY MARINE

By Captain Ed Tyer, Hunter Education Coordinator

HUNTING SAFETY REMINDERS

It's never too early to think about hunting safety or to review a few safety tips before you venture afield.

Safe Gun Handling

Firearm-related safety is paramount. Over one-third of all firearm related hunting accidents are self-inflicted. *You may be your own worst enemy*. Obey the 10 commandments of firearm safety:

1. Treat every firearm with respect. Always handle a gun as if it is loaded.
2. Watch the muzzle. Be able to control its direction even if you should stumble or fall.
3. Be sure the barrel and action are clear of all obstructions; only use ammunition of the proper size for that firearm.
4. Be sure of your target before you pull the trigger. Know the identifying features of the game you hunt.
5. Unload firearms when they are not actually in use. Take actions down or leave them open. Carry firearms to shooting areas in closed cases.
6. Never point a firearm at anything you do not want to shoot. Avoid all "horseplay" with firearms.
7. Never climb a fence or tree, or jump a ditch with a loaded firearm. Never pull a gun toward you by its muzzle.
8. Never shoot a bullet at a flat, hard surface or at water. At target practice, be sure your backstop is adequate.
9. Store all firearms and ammunition separately, beyond the reach of children and careless adults.
10. Avoid using alcoholic beverages and all other mood-altering drugs (including prescriptions) before and during use of any firearm.

Blaze Orange

Florida law requires all deer hunters and anyone accompanying them to wear a minimum of 500 square inches of fluorescent or blaze orange material above the waist while hunting deer on public land except during archery-only hunting season. A cursory review of hunting accident statistics indicates there are fewer accidents on public land than on private land, even though there are more hunters on public lands. Mistaken-for-game accidents are not limited to deer hunting, so why not wear blaze orange for all your hunting? Don't be mistaken for game. Wearing a blaze orange shirt or vest may save your life.

Tree Stand Safety

Almost all tree stand accidents involve falls. They could be reduced drastically if everyone used a safety belt. There are several different designs; find one that suits you and use it properly. Try it out before you have a problem and be sure you know how it works.

Don't Get Lost

Florida's weather can change rapidly. Learn to use a compass and always carry it in the woods. A compass could save you an uncomfortable night lost in the woods.

Hunter Safety Training Required

It is unlawful for any person born on or after June 1, 1975 to take wild animal life with the use of a firearm, gun (including a muzzleloading gun), bow or crossbow in this state without first having successfully completed a Commission-approved hunter safety course. Anyone under 16 years of age must have in his/her possession a hunter education graduate card or proof of satisfactory completion of Florida's hunter education course (or an approved course provided by another state or province) when purchasing a license. For information on the next course in your area contact the nearest Commission office.

Conservation Update

Compiled by Deborah Hartley-McAndrew

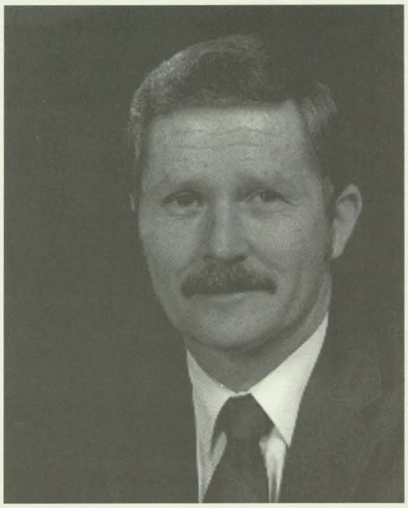
BRANTLY RETIRING FROM COMMISSION

Commission executive director Col. Robert M. Brantly is retiring after 36 years of public service. Brantly is the recipient of numerous awards for his work in conservation, including the International Association of Fish and Wildlife Agencies' highest honor, the Seth Gordon Award. Brantly will leave the Commission on October 31.

Brantly, originally from Jacksonville, was appointed executive director in 1977. He began his career with the Commission as a wildlife officer in central Florida, and was an education officer before being promoted to regional manager at northeast Florida in 1965. He served as the Commission's deputy director from 1973-1977.

"I am grateful for the many opportunities which have been afforded me during my career with the Commission and to have been part of an agency recognized nationally as a leader in fish and wildlife programs," Brantly said.

Under Brantly's leadership, the Commission developed one of the most comprehensive nongame wildlife programs in the United States and championed the enforcement of environmental laws to prevent habitat and wildlife destruction.



Col. Robert M. Brantly

EGBERT IS NEW EXECUTIVE DIRECTOR

The Commission named Dr. Allan L. Egbert its new executive director at its July meeting. Egbert, who has been assistant executive director since 1986, will succeed Col. Robert M. Brantly.

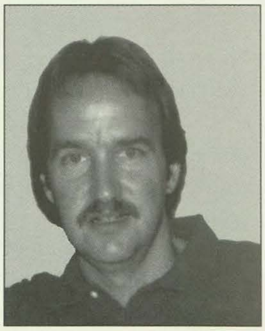
Egbert began his career with the Commission in 1977 as a wildlife biologist and has served as both assistant director and director of the Division of Wildlife.

Dr. Allan L. Egbert

CHANGES IN EDITORIAL STAFF

After a five-year stint, FLORIDA WILDLIFE editor Andrea H. Blount will be leaving the magazine for a newly created editorial position with *The Skimmer*, the Commission's nongame wildlife newsletter. Former FLORIDA WILDLIFE assistant editor Scott Ball has been promoted to assistant director of the agency's Office of Informational Services (OIS).

Andrea H. Blount



Scott Ball

BLACK SKIMMER, WHITE IBIS NOW "LISTED" SPECIES

The Commission voted to add the Florida mastiff bat and Florida saltmarsh vole to the list of endangered Florida species. The black skimmer and white ibis were designated species of special concern. There are only 25 colonies of black skimmers in Florida, and the wintering population has declined to one-third of its numbers in the late 1960s. The number of nesting white ibis in the state has declined by approximately one-half since the mid-1970s and as much as 80 percent in south Florida. Four species, all believed to be extinct, including the Goff's pocket gopher, the pallid beach mouse, the Chadwick Beach cotton mouse and the dusky seaside sparrow were removed from the endangered species list at the August Commission meeting.

WILD TURKEY/WATERFOWL STAMP DESIGN CONTESTS

Artists interested in entering the 1994-95 Florida Wild Turkey Stamp Design Contest or the 1994-95 Florida Waterfowl Stamp Contest may request official entry blanks, along with the contests' rules and regulations, from either the Turkey Stamp Contest Coordinator or the Waterfowl Stamp Contest Coordinator, 620 South Meridian Street, Tallahassee, FL 32399-1600. Entries, which may be submitted between Sept. 6 and Oct. 11, 1993, must be accompanied by an official entry blank. Winners will be chosen during the November Commission meeting.

FLORIDA SCRUB JAY MAPPING PROJECT

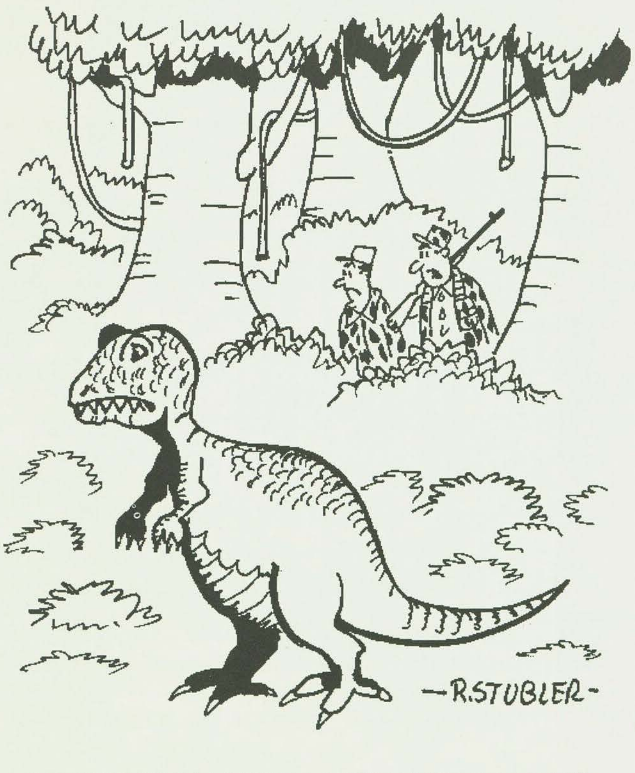
Researchers at the Archbold Biological Station are conducting a year-long statewide project to locate and map every scrub jay in Florida and assess the species' habitat size and quality. The project is being sponsored by the U.S. Fish and Wildlife Service. Anyone aware of Florida scrub jays is asked to report the birds' locations to personnel at the Archbold Biological Station, P.O. Box 2057, Lake Placid, FL 33852.

TEST COUGARS PRODUCE KITTEN

Texas cougars introduced into the Osceola National Forest/Okefenokee swamp area have produced at least one kitten, according to wildlife researchers. The cats, four males and six females, were released in the north Florida area to test the site's suitability for the reintroduction of Florida panthers. Tom Logan, head of wildlife research for the Commission, said the kitten was probably fathered by a male cougar raised in captivity.

"The fact that the sire was born and raised in captivity indicates we can condition these captive-reared cats to survive and breed in the wild," Logan said.

Although kittens were unexpected at this phase of the project, scientists will seize the opportunity to evaluate the ability of Florida panthers to raise young in the habitats.



" I THINK WE'VE GONE A LITTLE TOO FAR BACK INTO THE WOODS."

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Lake City	1-800-342-8105
Ocala	1-800-342-9620
Lakeland	1-800-282-8002
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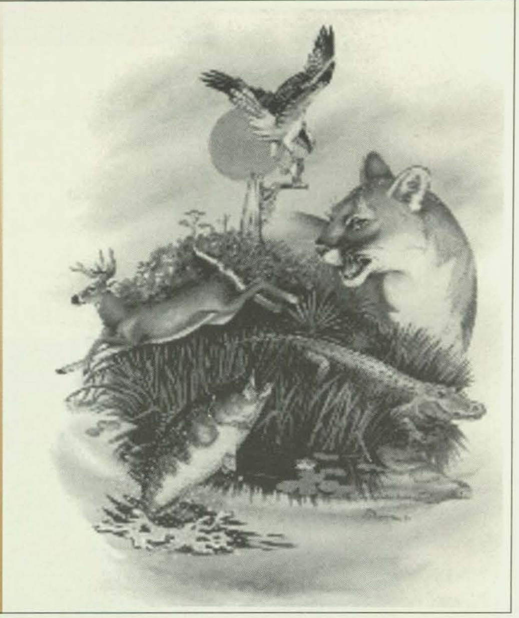
Report Wildlife Law Violators and Polluters!



REGIONAL OFFICES
Florida Game & Fresh Water Fish Commission

Northwest Region
3911 Hwy. 2321
Panama City, FL 32409-1658
Telephone: (904) 265-3676

Northeast Region
Route 7, Box 440
Lake City, FL 32055-8713
Telephone: (904) 732-1225

Central Region
1239 S.W. 10th Street
Ocala, FL 34474-2797
Telephone: (904) 732-1225

South Region
3900 Drane Field Road
Lakeland, FL 33811-1299
Telephone: (813) 648-3203

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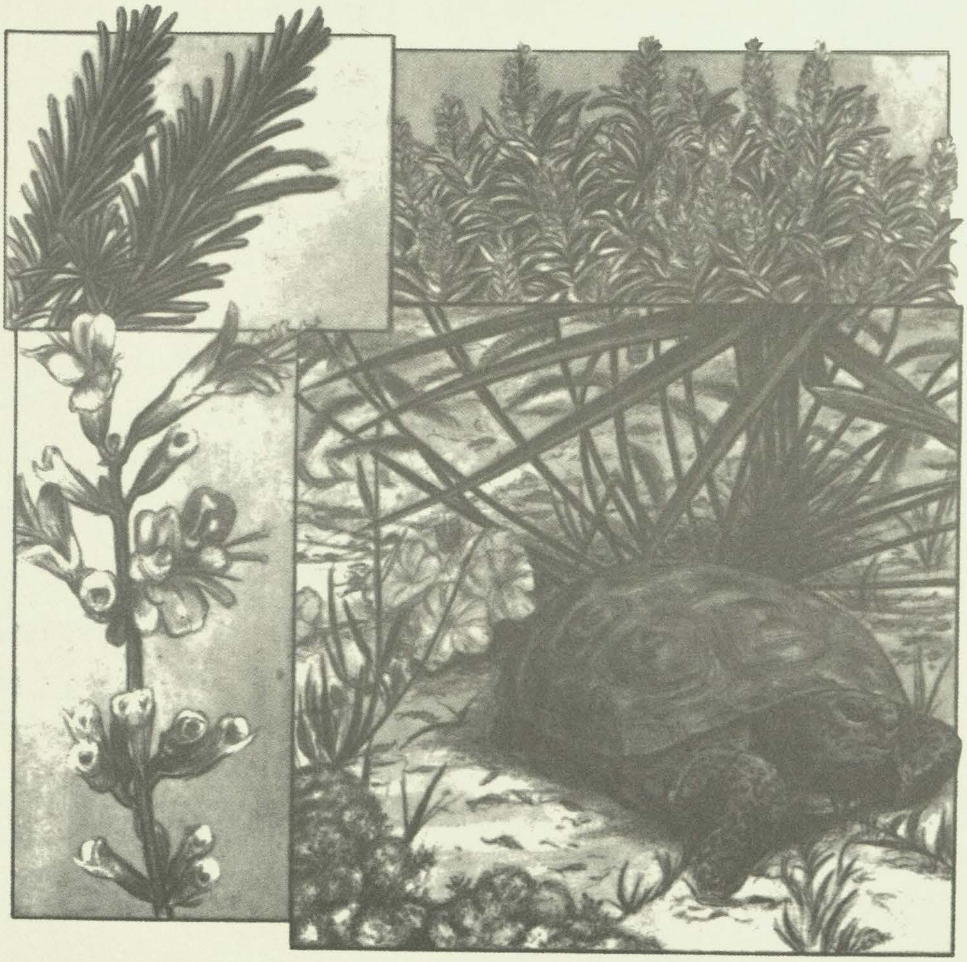
Floridana

Scrubby, desert-like hilltops in central and east-central Florida are extraordinary repositories of dozens of little-known plants and animals found only in our state. This under-appreciated habitat is characterized by scattered oaks or sand pines, dense, but patchy, woody shrubs and a blindingly-white sand substrata. Delicate lichens and lovely scrub blazing star, scrub morning glory and lupine soften the arid landscape in the spring. Fascinating and unusual wildlife species are adapted to life in the scrub, including sand skinks, scrub lizards, gopher tortoises and scrub jays.

But all is not well with this unique upland plant community. About 80 percent of the upland habitats on the central ridge of Florida, including two-thirds of the ancient scrubs, have already been converted to citrus groves and subdivisions, and more are slated for the bulldozer.

In 1988, Dr. Steven Christman completed a three-year field study of Florida's interior scrub habitats, funded by a contract with the Commission's Nongame Wildlife Program. His intensive surveys documented the urgency of listing seven plant species as threatened or endangered. He discovered a species of mint with unique biochemical characteristics that had never been described before, and relocated an extremely rare shrub, the Florida jujube, previously thought to be extinct. Christman's study and other biological surveys prompted the U.S. Fish and Wildlife Service to propose an unusual new National Wildlife Refuge to protect the biodiversity of the Lake Wales Ridge in Highlands and Polk counties. The 10,000-acre Refuge, scattered in 12 undeveloped tracts, will be the first refuge established primarily for the protection of endangered plants and a unique vegetation community. It will be part of a larger system of scrub preserves acquired and managed in cooperation with the State of Florida, the Nature Conservancy and Archbold Biological Station.

– Susan Cerulean



CLARK FRAZIER

Scrub species: (from lower left to right) Scrub Mint, Rosemary, Scrub Lupine and Gopher Tortoise with Scrub Morning Glory.